THE OIL WEEKLY

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The Oil Man's Calendar

FEB.	
4	National Oil Scouts and Landmen's Association, Dallas, Texas.
15–18	American Institute of Mining and Metallurgical Engineers, New York.
APR.	
8– 9	American Petroleum Institute, Division of Production, Eastern District, Wm. Penn Hotel, Pittsburgh.
7– 9	American Association of Petroleum Geologists, Texas Hotel, Fort Worth, Texas.
MAY	
5– 6	Petroleum Electrical Association, Houston.

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"NOTHING IS MORE IMPORTANT TO WAR PRODUCTION THAN SCRAP"

DONALD M. NELSON

This grand guy knows you're right, Mr. Nelson.

For the SCRAP that he and about 6500 other yard dealers prepare, when combined with smelted iron, contributes at least *half of the resultant total tonnage of new steel.* The steel industry might as well try to do without *iron ore* as attempt to produce *enough* war steel without *prepared* SCRAP from these yards.

With no thought of praise, nor expectation of reward other than a modest profit, this patriotic little band of scrap dealers will supply more than 20,000,000 tons of vital scrap this year!

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Are these the "forgotten men" of 1942? No "E" pennants or other merit banners flutter from their flagstaffs . . . yet without them few such awards would have been possible.

Forgotten, did we say? Well, not quite. Happily a growing appreciation of their vital contribution can be noted. *Well done,* Scrap Dealers of America!

Pittsburgh Steel Co.

GRANT BUILDING PITTSBURGH, PA.

The Changing Panorama

Crude Stocks Near Twenty Year Low

ALTHOUGH crude runs to refinery stills were 60,000 barrels per day less than in the preceding week, stocks of crude oil were drawn upon for 1,747,000 barrels during the week ended January 9, latest period for which figures are available. This continued draft on crude stocks, which began back in April, has reduced them to within 3,000,000 barrels of a 20-year low. At the rate they are being lowered, the end of January is likely to see them below the 20-year low mark.

With crude stocks at such critical levels, it would be highly desirable to increase production. However, limited transportation from Texas, the only area where materially greater production can be obtained, prevents. Crude stocks in Texas, despite the drop in national inventories, have increased during the past 10 months. Further boosts in this state's crude output will not help the situation elsewhere as long as the oil cannot be moved to market.

Some relief is in prospect through completion of the big-inch line as far as Illinois and finishing of several other transportation projects. Consequently, Texas production in February is to be 25,000 barrels per day greater than in January. As these pipe-line projects swing toward full capacity, the situation will be eased by additional boosts in Texas crude production.

Rubber Program To Use Little Oil

PETROLEUM'S contribution to the nation's program for making 1,000,000 tons of synthetic rubber per year is quite trivial when reduced to barrels. It is calculated that only 8,000,000 barrels per year, or less than 25,000 barrels per day, can provide the ingredients that petroleum will furnish to the synthetic-rubber program. In volume these figures do not make much impression when compared with a daily crude production of nearly 4 million barrels.

But while it may not be significant from a barrel standpoint, the contribution of processing methods for making synthetic rubber ingredients is very important. This is true, not only because of the urgent necessity of developing rubber supplies, but because refinery processing has been compelled to move in big strides, whereas normally it would have moved in fractions of inches.

It means that chemical processing is now and for the future, the new horizon of refining. Hereafter, crude oil will be cut into finer portions to the end that these fractions will find many unexpected uses. These will create a volume demand that will be worthy of being designated as important new markets.

Government in Oil?

Is the federal government contemplating entering oil business? We hear rumors that some in PAW favor the government's entering into a wildcat campaign on its own. We find it hard to believe and cross our fingers on the rumor. However, if the government should, it may learn something about the cost of being in the oil business.

As an old timer expressed it last week, "There ain't no cure for love like marriage!"

Increased Volumes of Super Aviation Fuel

DEVELOPMENT of a new catalytic process and dedication of a new big fluid catalytic cracking plant promise increased quantities of greatly superior high-octane aviation fuel.

In announcing the new process, Eugene J. Houdry, president of Houdry Process Corporation, declared it could "revolutionize the production of aviation gasoline, making possible the designing of vastly more powerful airplane engines than are possible with present aviation fuels . . . The quality of the gasoline is so high that it is ahead of currently developed engines. For the time being, therefore, its chief value will be to raise the octane rating of presently produced aviation fuels."

Significantly this new adiabatic catalytic cracking method produces aviation fuel from heavy naphtha, of which there are large quantities on the market. Consequently, the process makes increased aviation fuel production possible without increasing the need for crude oil or placing a further drain on transportation facilities. Houdry asserted plants embodying the new process would be simpler to construct than present-day catalytic cracking units and would require smaller amounts of critical material.

Almost simultaneously, Standard Oil Company of New Jersey was formally placing in operation the third "fluid-catalytic cracking plant" of the nation. This $6,000,000 plant is one of 33 scheduled to produce component ingredients of 100-octane, synthetic rubber and TNT.

Standard's new president, Ralph W. Gallagher, emphasized that the plant used a continuous catalytic process, which "permits the continuous operation of the unit without shutdowns to revive the catalyst." Higher octane base stocks for aviation gasoline than can be produced from any selected crude is made by fluid catalytic cracking, he said.

Without fanfare, OPA is raising price ceilings on an increasing number of commodities. This trend may indicate that the Administration is abandoning the idea of wide-spread subsidies, involving use of federal funds, in favor of a slight relaxation in controls on living costs, which contributes to inflation—so as to provide strong incentives for greater production.

This is another development that should improve the outlook for better petroleum prices.

Tubeless Tires Offer Little Immediate Help

THE tubeless tire apparently does not offer much help for the present rubber emergency, but the principle seems feasible and practical for the future, the transportation committee of the Petroleum Industry War Council has reported after surveying road tests on more than 1000 oil-company tires.

Omitting tubeless spares, which could not be kept inflated, and a few tires for which insufficient data were reported, a total of 619 original tires and 55 recaps were included in the committee's summary tables. Of the original tires, 404 were in good condition, 131 average, and 84 poor when the tests started. Of the recaps, 34 were good, 15 average and 6 poor.

Altogether 166 of these, or 25 percent, either failed or ended the test with such poor records that they could be classed as failures. Less than 20 percent of the good tires failed, while 30 percent of the average ones, and 40 percent of the poor ones, completed the tests unsatisfactorily. Few of the tires actually blew out

or were damaged beyond repair, most of the failures were from excessive loss of pressure. Considerable difficulty was experienced in sealing of tires with built-in vents, especially in the "hole" type. A means of sealing off the "hole" type vents to prevent excessive air leakage, which will work in all cases, has not been devised, the committee reported.

In recommending that further studies of tubeless tires be made, the PIWC committee said that although tests demonstrated the principle to be feasible and practical, and therefore as having large potentialities for rubber conservation, but that no practical universal application of the idea is possible with present tires under present conditions.

Week-end business of transit systems in big Eastern cities has been the largest in history since the ban on pleasure auto driving was ordered. Apparently the order did not stop pleasure riding, merely transferring the load from private automobiles to public facilities. Transit companies in Eastern cities reported the number of riders up 25 to as much as 50 percent from a month ago.

FIRST ARMY-NAVY "E" FOR OIL REFINERY

The first Army-Navy "E" to be won by an oil refinery was presented to the men and women of Shell Oil Company's Wood River refinery on January 15. In presenting the award, Colonel Merle H. Davis, district chief of the St. Louis Ordnance district, asserted: "Special marine lubricants developed here have been of important use in the Navy's operation of ships. The Shell company was first to supply Army and Navy aircraft with 100-octane gasoline, and toluene from this plant just goes across the river to the TNT plant operated by Army Ordnance to make TNT used by both the Army and Navy. These three may be considered direct contributions from this refinery to the fighting forces. These items, of course, are superimposed on your industrial lubricating oils and fuels for both industrial plants and military and commercial vehicles." Photograph shows Mrs. James H. Doolittle, wife of Major General "Jimmy" Doolittle, commanding American air forces in North Africa, who is on leave from Shell Oil Company, and Robert C. Roberts, manager of the refinery, holding the "E" award pennant.

Oil Furnishes Many Vital War Products

IN connection with the oil industry's role of supplying products for war purposes, the headlines have gone largely to 100-octane gasoline, which enables planes to fly faster, higher, farther, and with greater loads; to toluol, basic ingredient of TNT; to butadiene, raw material for manufacture of synthetic rubber. And in furnishing these critically needed products, the industry ranks along with other indispensable industries in prosecution of the war.

However, the oil industry plays a much more important part than furnishing merely those products. In addition to 100-octane-aviation grade, the industry is supplying large amounts of other qualities of gasoline for aircraft and military equipment, including 91-octane, which is used principally for training purposes. Special lubricants for aircraft and other mechanized equipment are required and furnished. Great quantities of Diesel oil and bunker oil are supplied for ships, and the demands are fast growing. Industrial grade fuel oils for war industries are being supplied in approximately sufficient volumes, although with difficulty because of transportation shortages.

Non-floating greases for submarines and launching greases have been developed, and numerous special lubricants are provided, including low temperature lubricants for high-altitude military aircraft, recoil oils, various special lubricants for use in aviation, and heavy duty paraffinic lubricating oils.

Advances have been made in fuel investigation, particularly in the field of high speed, smokeless Diesel fuels, and an inexpensive additive has been developed to increase the efficiency of high-speed Diesel engines. To combat the problem of the annual loss of 2 percent of the country's steel output to corrosion, the oil industry has made commercially available an effective rust preventive coating material. Asphalts furnished by the industry are used to pave the runways of airports. Waxes of high melting point, formerly supplied by the Dutch East Indies and therefore, like rubber, cut off from this country, now are being supplied by oil companies for coating ammunition, treating food packages, and other essential purposes.

Safeguarding and Extending Cordage Service Life

Disruption of basic fiber importations for making ropes makes maintenance of such materials a must for petroleum — it being one of the larger users

By ELTON STERRETT, Staff Writer

SYNTHETIC fiber, for the many types of fiber lines which are used in cable-tool drilling, rotary spinning lines and the many demands of the drilling industry for other than metallic rope, is even farther from filling the present need of drillers for new and replacement rope than is the much talked of synthetic elastic which is to replace natural material in the tires which must haul men and materials. Steel or wooden tires could be used as a last resort to keep automotive equipment rolling, but, so far, no successful, safe and effective substitute has been found for the fiber line as "cracker," spinning line or catline.

The replacement demand for cordage in normal, or pre-Pearl Harbor, times ran into hundreds of miles of catline alone, it being estimated that a drilling program of 30,000 wells per year would require more than a mile of 1½-inch line for every hundred wells drilled. Even more severe is the service on the spinning line, normal times calling for 1.2 miles of this material for each hundred wells drilled. These figures presuppose a 50-50 break between rotary and cable-tool units, though the amount of line is itself dependent simply on the number of wells drilled with rotary equipment.

With such a demand for manila line the oil industry has long been one of the largest consumers of such material in the country, and as such, is hard hit by the disruption of imports of basic fiber, most of which came from areas now under domination of the Japanese.

Stocks of fiber in the United States at the time the Japs overran the Philippines and cut off the raw material at its source were at a seasonal low, and government restrictions now limit new manila line in the drilling industry only to the amount used as "crackers," with the amount of line available for spinning ropes and catlines drastically reduced as compared with only a year's normal supply.

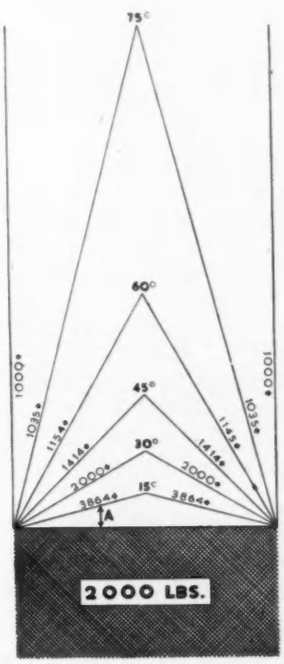


Chart showing distribution of load in parts of sling under varying angles in the lifting lines. Disregard of proper angularity when making lift overstresses line and frequently is underlying cause of sling or catline break at what appears to be much less than rated capacity.

Rope fiber, whether manila, sisal, henequen or some of the less widely used materials, is a product requiring a period of natural growth before it can become usable for rope making. There is an inevitable period of delay or scarcity before new sources of fiber supply can be developed within reach of our present circumscribed transportation system.

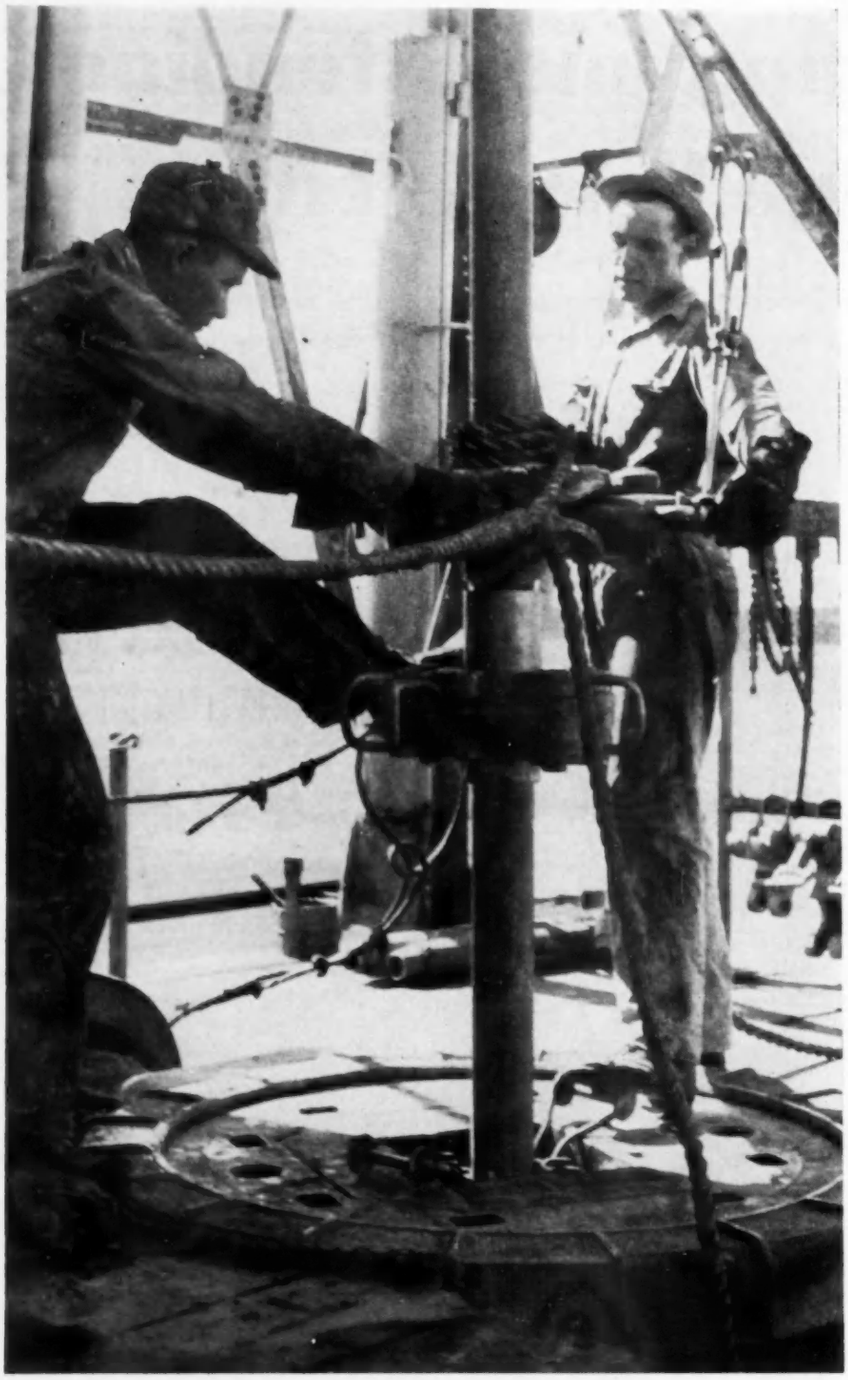
Companies are everywhere revising their rope programs to prolong the life of rope already on hand, to develop and revise to permit the use of rope substitutes wherever possible, and to see that all rope used is worked to best advantage.

Since the cathead is a point where the means of use involves slipping the rope to obtain intermittent and graduated load application, it comes first in the rehabilitation program. Rough, scored or grooved catheads are reconditioned or replaced so as to provide a smooth working surface. Existing installations, unprovided with mechanical means for preventing overriding or crossing of the second turn on the first and thus subjecting the rope to crushing and abrasive abuse, are being worked over and some type of finger, guard or spacer provided to keep the line clear of itself under load. When possible, due to existing clearances, undersize catheads are being removed and replaced with units having larger working diameters, so as to extend the area of rope under friction when working, and to prevent severe distortion of strand relationship as compared with straight-line pull. When replacing small-diameter catheads with larger units, adjustment must be made on the revolution speed of cathead shaft to prevent setting up an idling or no-load speed which will result in overheating or actually burning the rope fibers in contact with the steel head.

Snatch blocks through which rope is run are being worked over to remove the dents, cramped clearances and small sheaves which have been accepted as part of the job. One company called in all its old snatch blocks, in which a 6-inch pulley was standard, and replaces them with 10-inch units. Instead of the usual flat steel plate forming the side of the block, the new units were faced with a wood fairing strip, providing easy run into the block and preventing the actual contact of rope and sharp edge of steel shell.

Rope Care

Prolongation of rope life begins with its receipt from the warehouse or distributor. If delivered in the sacking-covered coil, the unit should be carried flat, not stood on edge while being



A well-tapered splice between spinning and jerk line, served with marline or twine after splicing, prevents overloading of single strand, and presents tapered surface which guards against catching or hanging of line on rough spots with consequent overstressing as obstruction is cleared.

trucked to destination. It should rest flat on the truck bed or platform, and should neither lie atop tools, wrenches and pipe nor below any of these. During transfer it should be kept dry or, if soaked by rain while in transit, the coil should be stripped of its sacking cover and flaked down with end turns not less than outside diameter of initial coil until the fibers have dried thoroughly. Inspection of the inside of the rope frequently demonstrates that the outside may appear dry while the interior still retains considerable water. Twisting the rope between the hands to open a space between adjoining strands permits examination of the interior of the rope. Similarly, thrusting a marlinspike into a rope to open a space permits like examination of a strand. Wet fibers can be recognized by darker color than the same material, dry, and also by a tendency to cling together, rather than to present an array of fine bristles or fibers sticking out at all angles to the laid material.

Drying of a rope, whether new or well worn, should be carefully done if maximum rope life is to be attained. The rope preferably should be dried in the sun, either laid flat on a smooth, clean surface, or strung back and forth between a pair of horizontal arms on posts so set that the span of rope is not carried over steam pipes, water or loose dirt or dust. A wet rope, no matter how soon it is again to be needed, should never be wrapped around a fired rig boiler—even if the latter be lagged—the coils thrown across it, or even suspended between two adjoining boilers. The excessive heat to which the outside fibers are exposed will drive off the lubricant which is built into the rope, and will tend to impart a permanent fix or set to the fibers, impairing the ability of the rope to distribute stress equally throughout its cross section.

Rope stored in an excessively dry place will deteriorate rapidly. Storage on a rack built up under a corrugated steel roofing, especially in warmer climates, exposes the rope to excessive heat and the fibers are prematurely aged through drying. Likewise, rope which is stored (not merely dried) in direct sunlight loses much of the life and elasticity of the fibers exposed to sunlight, and will not give lasting service nor sustain as high loading as will a rope properly stored in a cool, dry place.

When rope is to be stored for a considerable time, as when a line is coiled down for the winter, the extra time spent in providing an open, raised platform will pay high dividends in added rope life. Where a platform is especially built with provision for ventilation from below, boring large holes at frequent intervals with an auger will provide for air access to the lower coils. If the rope is not known to be thoroughly dry before storing, the placing of one or more "breathers" in the coil will also be worth while. These breathers are simply spacers or dividers, laid atop the partially completed coil, and notched or bored to afford air circulation through the boards composing them. The coil is continued atop the spacer, and thorough airing of the fibers thus assured.

Being composed from a natural vegetable fiber, rope is sensitive to weather changes, and a frozen rope should not be used until it has been thawed and dried. Use of a frozen rope, the spaces between the strands filled with ice, exposes the fibers to the cutting action of these sharp particles, and results in excessive internal damage to the rope. Frozen fibers likewise are brittle, and break when bent, instead of sliding and transferring the load.

Rope which has been used in mud, sand or dirt should be brushed as clean as possible before storing. If the rope is still dirty, it should be washed with a hose or in a tank. The water pressure on the hose should be reduced, and no

nozzle used. A washed rope should be carefully dried before being again put into use. Leaving dirt, grit and sand on a rope results in part of this abrasive material being forced or worked into the strands every time the rope is bent, the particles tending to cut fibers restraining them, and to weaken the rope seriously. Grit in a rope is as serious as in a chain, bearing or other machine equipment, the friction and abrasion set up being equally destructive in either instance, even if not noticeable or audible in the rope as it is in the machinery.

Avoid Sharp Bends

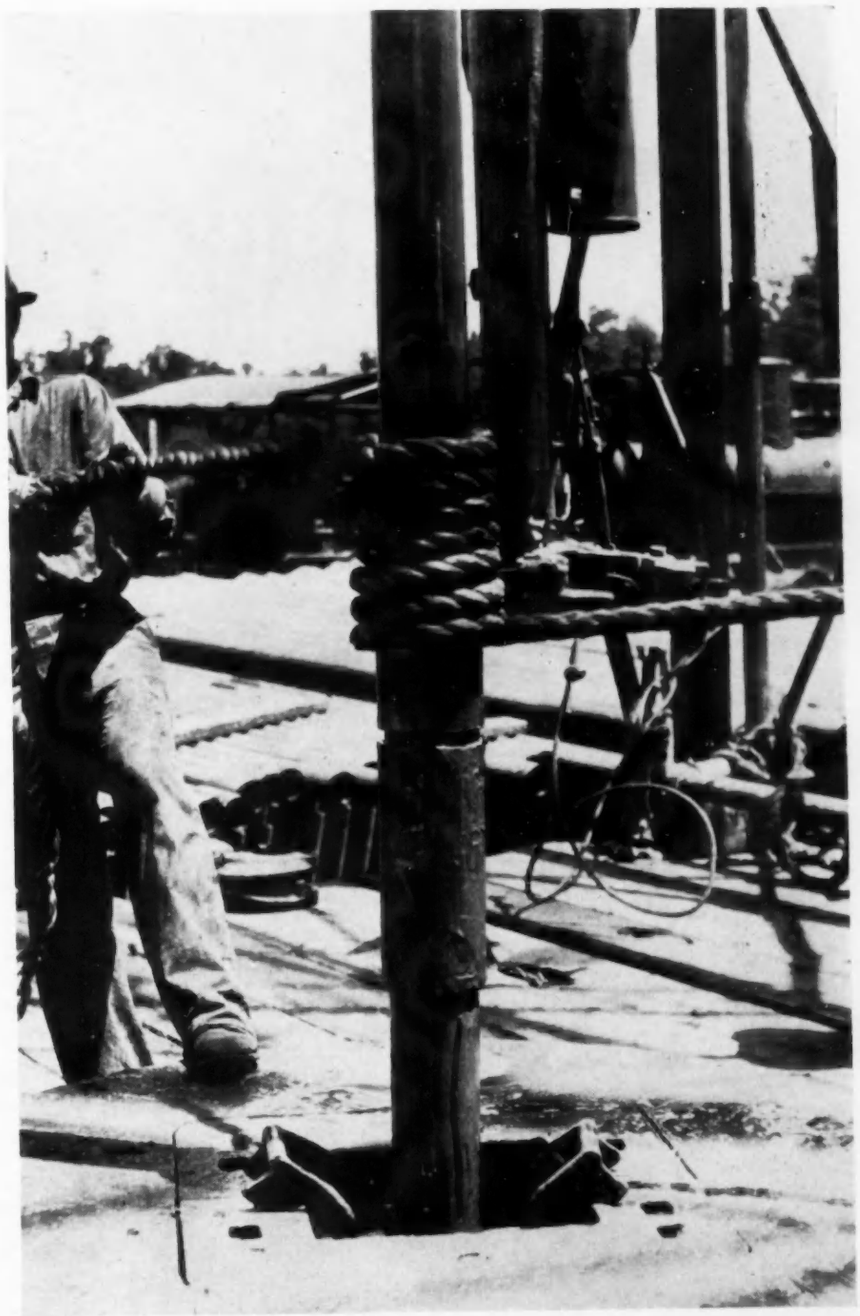
Rope fibers are laid up in the walk to sustain maximum stress when pulled longitudinally, or with the rope straight. Bending the rope throws some fibers out of line, compressing the twist on one side and opening it 180 degrees around the rope. This shifting of normal rope make-up tends to move the fibers out of place, and if carried to excess, results in rope break. Thus, the sharper the deflection in a section of rope, the greater the chance of breakdown. When a rope is kinked a dog-leg is formed which is as serious as the same deformation in a wire line. The difference between the two types of rope permits the added flexibiilty of the fiber rope to absorb—externally—most of the evidence of deformation and the kink is thus disregarded. Kinking results in the breaking of fibers both inside and outside of the sharp bend formed, as well as crushing of the inner fibers. A sharp bend thus formed is as serious as the stress put in a rope by applying load around a sharp corner, the only difference being that the corner may actually sever fibers at the area of contact.

When a rope must be used around a box or other object with sharp edges, much rope service can be saved by using some sort of lagging. Even the use of a bit of folded canvas at the contacting point helps much. Some companies are now furnishing their tool boxes with a few short sections of old tires, across the tread section of which have been cut shallow grooves. When a heavy timber unit, for instance, is to be lifted with the derrick line, these rubber and fabric spacers are placed at the spots where the sling otherwise would tighten on the corners of the load, and the fiber distortion thus spread over wider rope section than under former practice.

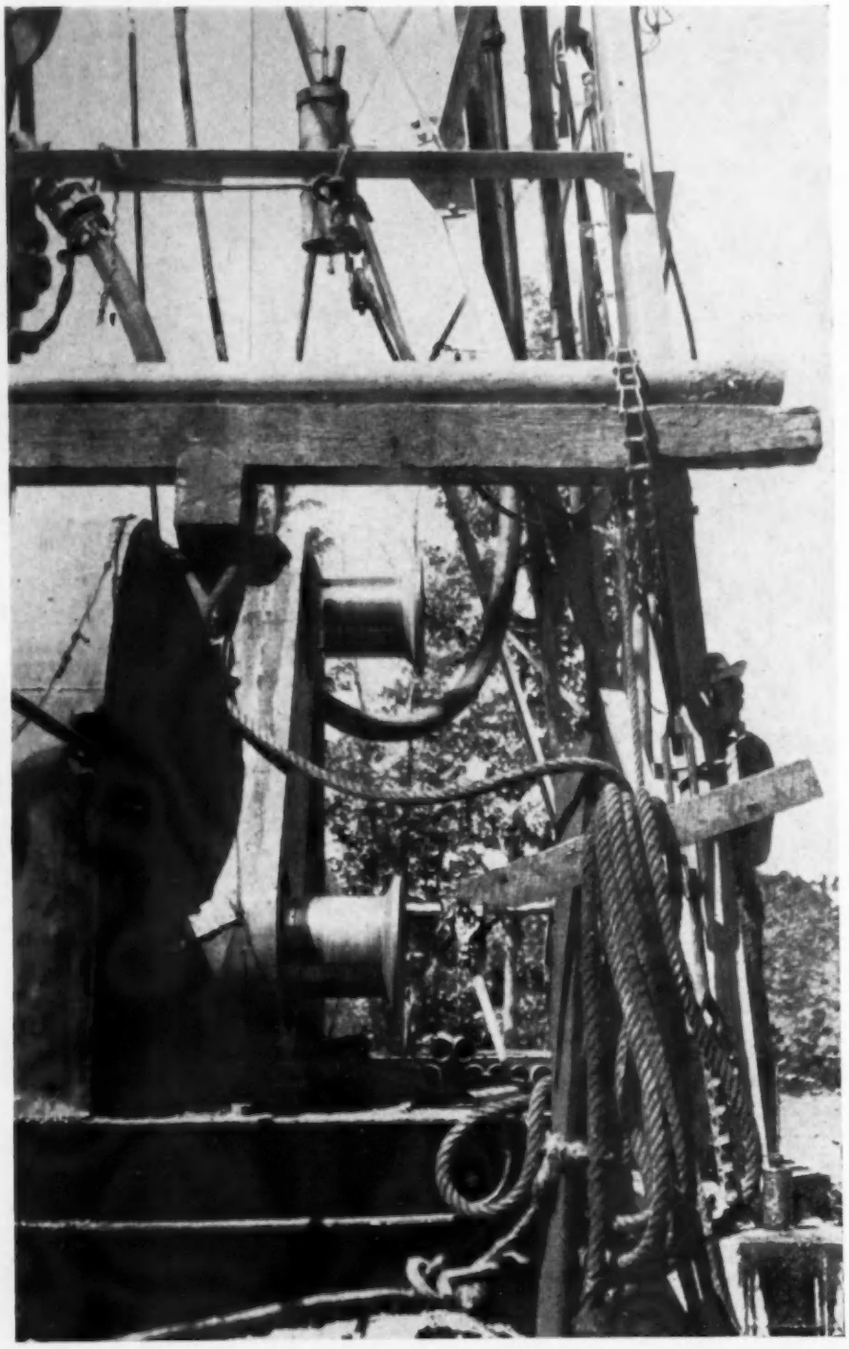
Knots and Splices

The added life to be expected if a rope be kept free of short turns and kinks meets direct contradiction in the formation of most knots. The effectiveness of the knot depends upon the grip set up between parts of the tie and this, in turn, depends upon bending the rope so sharply that it can not slip or feed through the restraining loop. When necessary to knot or fasten a rope it should be remembered that, if the strength of a straight section of the line be taken as equal to 100, a long splice will have a value of 95, a short splice of 80, an eye splice with thimble of 90, a bowline of 60, and a square knot of 50, or just half the strength of the straight rope.

The square knot should be used when tying two ropes of the same size together if they are to be separated later, and only when they are to sustain straight pull in one direction. Alternate tightening and slackening of a line tied with a square knot, especially in sizes normally used around the drilling rig, frequently results in slack working into the knot and eventual freeing of the ropes. The square knot may be made more secure and the strain on the crossed strands equalized somewhat if the ends be carried out along the standing parts and whipped or seized in place. Another practice which insures a tight though releasable square knot calls for carrying the end through a loop formed by raising one strand and tucking.



One wrap of spinning line to the inch of drill pipe diameter gives ample power to revolve pipe, but adding one or even two turns provides extra cushioning effect against possible slip and grab as cathead power is applied. Here six wraps, evenly laid, check slipping and reduce wear between turns as the pipe is made up.



Even the adding of a short post and horizontal arm on which the coil of derrick line may be hung between jobs keeps the line out from under foot and possible scuffing, enables it to air out and dry thoroughly, reducing danger of mildew or rot and premature breakdown of the fibers.

Though this adds security to the knot, it imposes extra stress on the raised strand, and therefore should not be used if the knotted rope is to be loaded close to its stated maximum. The ropes should be spliced if the service is to be continued.

Where a rope is to be made temporarily fast to a hook, as is frequently the case at the rig, a Blackwall hitch, single or double, is used. This tie, though easily thrown over the hook, subjects two short sections of the rope to excessive crushing if much load is to be lifted and will result in premature breakdown of the rope if frequently tied in the same spot. A much better tie, and one being specified by some companies in an effort to prolong rope life, calls for the tying of a bowline in the end of the hoisting line, passing the loop up behind the hook to the shank, and then crossing both parts of the loop inside the curve of the hook. This fastening is much more secure against sudden slackening of the load than is the Blackwall, and can be slipped off simply by raising the bowline and backing the loop off the heel of the hook. The strain of the load may be adjusted, using this hitch, so that the two halves of the loop are not in contact over the hook, and thus the concentrated crushing of the Blackwall hitch is avoided.

The fastening of two ropes with a pair of bowline knots, formerly commonly used around the rig because of the ease of untying the knot after the load was off, is being discouraged by many companies attempting to decrease rope loss. The two loops, at the point of contact, tend to saw or cut one another, and have a very low factor of safety. For such a knot, instead of the square knot, which tends too often to become jammed and which has a low safety factor, many riggers now use a Carrick bend, lashing the free ends against the standing parts with a bit of marline or soft line. Such a knot will carry 75 percent of the safe load of a straight rope, and is easily untied, at the same time offering the advantage of reducing chafing between the ropes to a minimum.

Salvage

Old rope formerly was looked upon as a good cushioning material, for forming strands at the brake, on the racking front, and on the fourble board. The demand for used rope fiber now makes worn-out rope more valuable for salvage than it could possibly be if used to provide safe or dry footing for the rig personnel. To insure the return of worn rope for salvage or use in other war industry, many companies now demand the return of a worn rope either in exchange for a new line, or within a short, specified period after installation of the new unit. Every effort is made to reduce the loss in rope. Short ends, cut off because of wear or abrasion, are saved, longer lines, with a worn section are being spliced; using a short splice if the line does not run over a sheave or guide, a long splice if it must be threaded through a block. The spinning line, formerly forked and with both tails of cordage, now incorporated a swivel with the spinning line now being a chain, and the jerk line a bit of flexible steel line, spliced to the swivel eye and held at the tongs with clips or clamps. Even the "monkey tail" which the derrick man wears attached to his safety belt is no longer all rope. A six-foot length of rope carries the safety hook, its other end being spliced to the eye of a swivel which, in turn, carries a short wire line with an eye splice at the outer end, the wire line being looped around a girt or corner and the rope end then snapped in place on the belt.

Don't Paint a Rope

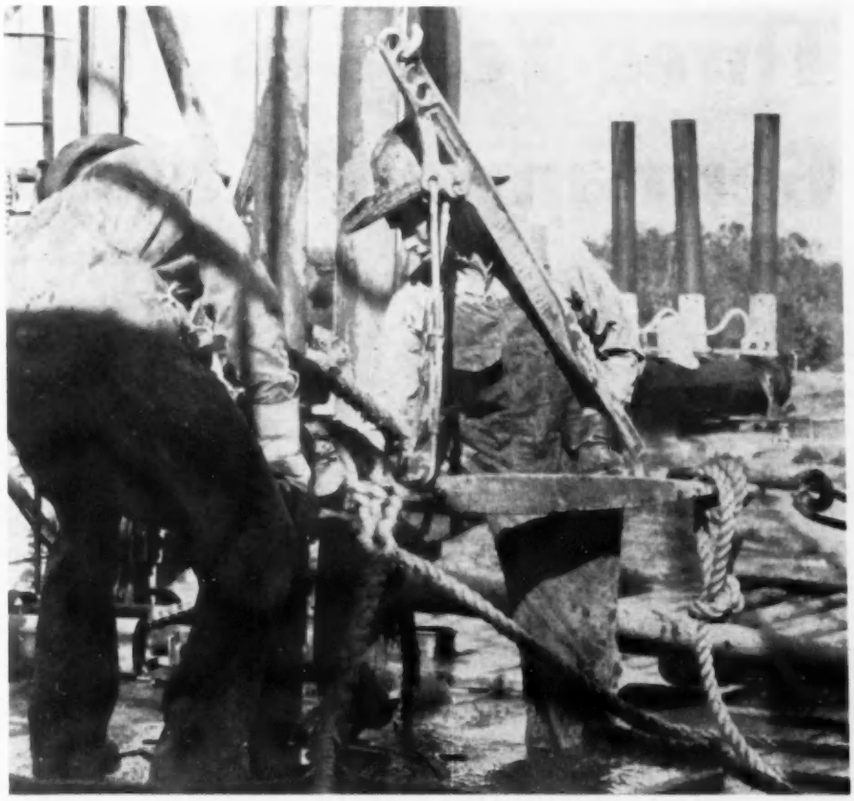
Some crew men, under the belief that paint, good for metal surfaces, is good for everything, paint spare ropes. This practice cannot extend rope life, on the contrary, it results in greatly shortening

the life of the fibers. Due to the flexibility of the rope, it is impossible to maintain an unbroken paint coating as weather protection. Water quickly seeps in through the cracks and breaks in the paint, and then is prevented from evaporating as rapidly as from a clean rope. This retained moisture sets up conditions favorable for mildew, and internal rot soon weakens the rope and makes its use hazardous.

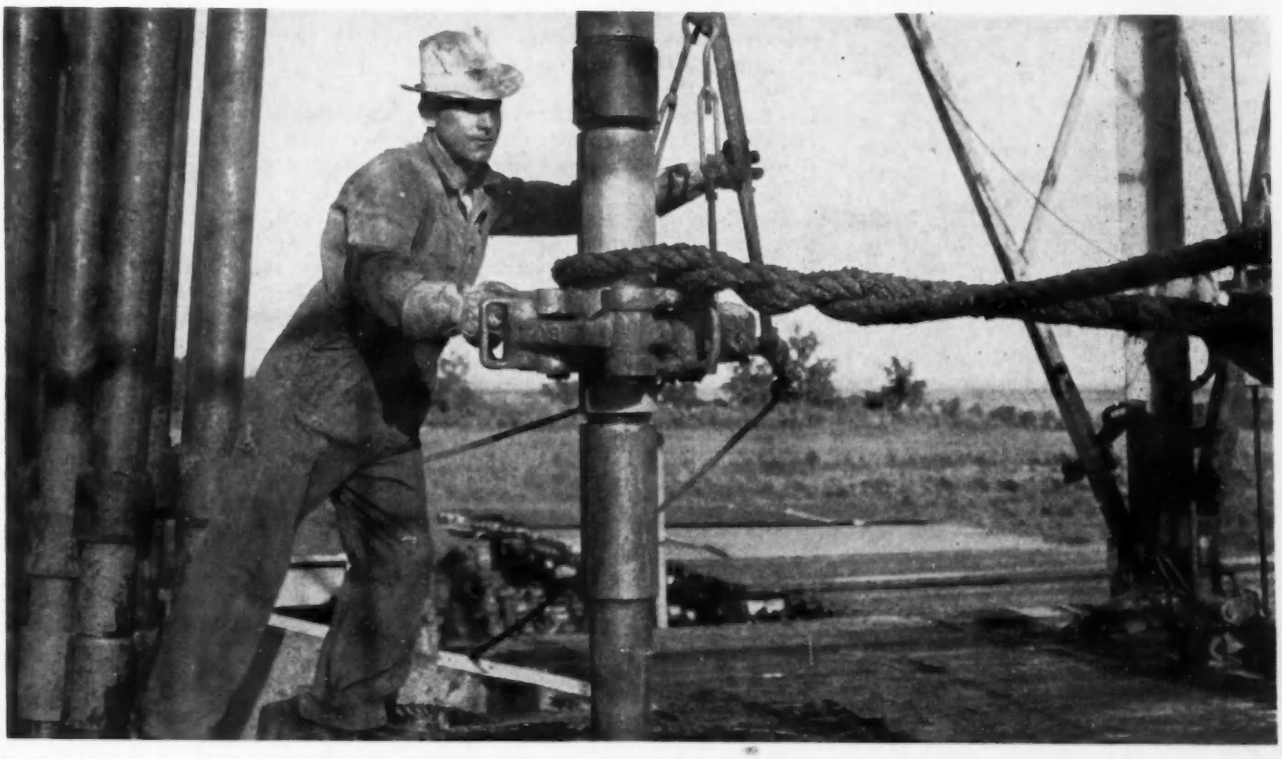
Rope, lubricated at the walk, has built into it ample supply to last its normal working life. It should not be lubricated with any of the mineral or animal oils used around machinery, nor, if accidentally coated with these or crude petroleum, should it be soaked in gasoline to clean. Linseed oil and other quick drying water-repellants also are detrimental to the life and proper functioning of the outer fibers of a rope, and should not be used.

Rope should never be exposed to acid fumes or hot exhaust gases. Gases such as those emanating from sour crudes can cut rope life in half through the effect of the fumes on the fibers, alkali dust is equally as bad for ropes, in addition to the abrasive action of the particles.

To obtain long rope life: run slowly; load gradually; keep dry; splice instead of tie for permanent junctions; reverse ends frequently; cut and splice at worn spots; treat it as though the very job depended upon the lasting quality of the rope—as indeed it frequently does. For surveys in many fields indicate that, of all the expendible supplies in the oil industry, cordage stocks are lowest and chances of quick replacement least.



Looping the line through the eye of the tongs places the full strain of the tonging operation against the short section of one or two strands in contact with the metal eye. Use of a formed thimble and a splice at this point, or at least the use of a short, seized bowline would prolong rope life at this point and prevent premature waste of the amount of line used in the knot beyond the eye.



Use of the derrick or catline to align the drill pipe during high winds throws high and abrasive stress on the contacting strands as power is applied, and drag over the tong latch handle overloads the rope at point of contact.

Three Years of War Change Germany's Oil Situation

Production of crude oil in Germanized Europe may have been increased by about 15 percent under the driving stimulus of war . . .

The output of synthetic fuels probably has been multiplied many times over . . .

But now forced to fight a continuous intensive war, Hitler's stored supply of petroleum probably has been depleted and he has no opportunity to replenish . . .

The European conflict now is entering a phase in which petroleum may be decisive factor . . .

By ROY E. LEIGH

IF ONE knew the measure of Axis resources of petroleum and its products, both natural and synthetic, it might be possible to predict the end of World War II. No recent statistics are available; but by giving effect to such facts and trends as are known here, it is possible to formulate certain rough estimates.

It is well known that this war was planned as a Blitzkrieg on Hitler's part, and it goes without saying that huge reserves of fuels, lubricants, and other petroleum products were accumulated before the dogs of war were unleashed in 1939. To these, in rapid order, were added the stored reserves of Poland, the Low Countries, France, the Baltic Regions, the Balkans, and other countries. Thus, throughout 1939, 1940, and 1941, conquest was fed by conquest. Petroleum supplies expended in conquering each country were replaced immediately by the booty taken in that country; and so on, until virtually all the petroleum reserves of Europe came under German control. There is no mystery concerning the sources of Germany's petroleum during this initial phase; the on-marching *Wehrmacht* found adequate supplies on hand in each country it entered.

During the first three years of war, the Germans were able to select the time and place at which they would give battle. Fighting on their own time schedule, for example, they were able to dispose their oil supplies in anticipation of military movements. During the interim of the Russo-German reapproachement, the Germans purchased large quantities of Russian oils and stored them in Roumania, in tank farms and in tank cars on railway sidings, awaiting the outbreak of hostilities according to German plan. Thus, Russia fueled the first German attack against her—even as the United States fueled the Japanese attack on Pearl Harbor.

Likewise, operating on their own time schedule, the Germans were able to withdraw their armies from advanced posts on the Russian front in December, 1941; and to use the winter months for the production and accumulation of crude oils, refined products, and synthetics required for the resumption of active warfare in the spring of 1942.

The Russians have allowed them no time out for rest and recuperation so far this winter; and Generals Montgomery and Eisenhower, similarly, have kept them occupied in Africa. General Rommel, for example, was forced to expend great quantities of gasoline in his flight across the desert. It is suggested here that the war is entering a new phase, wherein the initiative has passed to the United Nations, and Hitler no longer is to be allowed time out for the rehabilitation of his oil stocks.

Estimated European Crude-Oil Production

Country	1939	*1942
Germany	4,577,000	6,000,000
Roumania	45,997,000	50,000,000
Poland	3,920,000	4,500,000
Austria	745,000	1,500,000
Hungary	771,000	1,500,000
France	502,000	500,000
Czechoslovakia	121,000	121,000
Italy	91,000	90,000
Albania	1,386,000	2,500,000
Totals	58,090,000	66,711,000

* Rough estimates.

Now that Hilter must begin to fight defensively, the transport problem will assume importance of the first magnitude. His dwindling supplies of gasoline are going to have to be shifted around by train and barge to meet attacks at times and places not of his own choosing. Western Europe has no pipe lines, and all this movement must be by tank cars and barges, all vulnerable to attack from the air. We can visualize long train-loads of tank cars, one behind the other, the locomotive of one nuzzling the caboose of another, crawling back and forth across the rails of Europe, with Allied warplanes strafing them from the air. We have had some experience with tank-car shortages on our own account, so we know what the Germans will be up against when it is no longer possible to spot their fuel dumps in advance.

Oils stored on the continent of Europe had only a fleeting, temporary value to the conquerors; once used, they could not fully be replaced. Confronted with failure in the final phase of his Blitzkrieg, and foreseeing the end of his reserves, both hoarded and stolen, Hitler was forced to make war on countries possessing adequate resources in a more permanent form, namely oil production. Hence, his attack upon Russia.

Economists may consume reams upon reams of paper in compiling estimates of Axis demand versus European supply, but when all is said and done, here is the surest evidence that Hitler is not

now well supplied with oils and fuels. The avoidance of war on two fronts is a cardinal tenet of German military strategy; and Hitler would not have violated this doctrine if he had not been threatened with a deficit in petroleum. Oil, or the lack of it, forced him to fight on two fronts. Oil has dictated the course of this war, and oil may decide its term.

The broad outlines of Germany's oil shortage are growing more distinct, even at this great distance. No one outside the High Command knows exactly how much oil and gasoline are needed to supply the Axis war program, or how much of a shortage exists between the demand and the supply, but one has only to enumerate the many machines of war which must be fueled from continental Europe's dwindling oil reserves to realize that the tide is running against Hitler. The demands of the army, the air force, the submarine fleet, and the Italian navy, or what is left of it, and of the armament industry, are enormous and insatiable; and Hitler's sparing use of his air arm during 1942 is one of the surest of several signs now discernible as indicating a growing shortage of gasoline. Newspaper dispatches state Russians are capturing Nazi tanks stranded for lack of fuel.

It is plain to be seen that Hitler's campaigns of 1942 were pointed directly toward oil. Rommel was instructed to cut the British life-line at Suez, and to proceed on to the conquest of the oil fields of Asia Minor; and his colleagues on Russian soil were supposed to cut the Volga waterway at Stalingrade, and to continue on to conquer the fertile oil fields of the Caucasus. These were the prongs of the greatest pincers movement in military history, embracing both the Mediterranean Sea and the Black Sea, and all of the oil-producing regions bordering upon them. Both campaigns required enormous expenditures of gasoline, and both failed.

It is futile to attempt an exact measurement of the oil supplies of Germanized Europe against the demands of the Axis armies, since no reliable production figures have been allowed to pass the censorship since the outbreak of war. However, it is possible to go over the ground, and to grasp at certain conclusions which may be supported in part by what little is known regarding the trends of the production curves in each of the several oil-producing regions upon which the German military and armament programs are dependent.

By considering each European oil field separately, and by weighing the factors which probably operated in each, we can approach the conclusion that production averages generally have been increased under the impetus of war. By such methods, it is estimated that warring Europe produced approximately 66⅔ million barrels of crude oils during 1942.

Roumania

The trend of production in Roumania was definitely downward during the pre-war years; but certain compensating factors have been operative since that date. British and foreign oil industries operating in Roumania did not have opportunity to repeat their scorched-earth tactics of World War I, so Roumanian oil production was taken over by the Germans intact. Not only that, but there was an adequate nucleus of Roumanian, French, and other European engineers and technicians trained in the use of modern equipment, with whom the Germans were able to carry on production activities. The rotary method was employed in Roumania, where American equipment was used extensively; and, unless the Germans were extremely far-sighted in their plans, so as to provide supplies and replacement parts for this imported machinery, the probability is that this bottle-neck has restricted their success to a degree. On the other hand we must admit that the Germans have been far-sighted in their plans for this war and this handicap may have been overcome. Guessing somewhat as to the final outcome of this inter-play of conflicting factors, we suggest the probability of a 10 percent increase since 1939, knowing that the best efforts of German engineers have been exerted in this their most fertile field.

Poland

No news has come out of Galician oil fields since Poland was conquered in 1939, but it is safe to assume that the Germans at least are able to match the skill and efficiency of the Poles. Production was increasing in 1939, during which year Poland produced about 3,900,000 barrels of crude oil. With some first-hand knowledge of pre-war conditions in Poland, but with little or no other data on which to base an estimate, the guess is hazarded that the Polish oil fields may have produced approximately 4,500,000 barrels of crude petroleum during 1942. This increase is allowed, out of consideration for the probability that German engineers may have had all plans made for the continued exploitation of the oil fields in Galicia.

France

German engineers pioneered the novel oil-mining operation at Pechelbronn, in Alsace, where approximately 500,000 barrels of oil were recovered during 1939. Since they are good at mining engineering, and quite at home in this former German province, a 20 percent increase is not beyond the capabilities of German technicians during the period which has elapsed since they regained control of this enterprise. We guess 600,000 barrels from this source for the year 1942.

Other Countries

News dispatches from neutral countries have brought reports of the successful completion of certain new wells in Austria, Hungary, and Albania, three countries in which new production had been found during the years immediately preceding the war. The opportunity having been present, we may assume that German experts may have taken advantage of it further to increase output in these countries, approximately as indicated in the table.

This writer has had no reports from Czechoslovakia since the outbreak of war, so we are forced to stand on the 1939 figure of 121,000 barrels.

Germany

In pre-Hitler times, German oil producers were extremely backward in the adoption of modern methods of drilling and production, but the Little Corporal, or his economic advisers, were quick to recognize this weakness as it affected his plans for the future, and in 1934 the *Reichsbohrplan* was instituted for the intensive exploration and exploitation of the German subsoil.

The German Geological Survey was made responsible for geophysical surveys and geological studies, and an agency was created for cooperation between staff members of oil-producing companies, government bureaus, and *Bohrmeisters*. This body, known as The National Economic Group for Oil Wells, was successful in the discovery of certain new fields in Hannover and elsewhere, and in the drilling of new wells in known oil fields. Financial assistance and governmental subsidies are believed to have made possible the expansion of this drilling program during recent years; and we cannot overlook the possibility that new oil production may have been developed in substantial volume.

Hitler launched an accelerated construction program in 1937, which was intended to make Germany independent of foreign imports of gasoline and light oils within 18 months. This indicates that even then he was laying plans to make war on his neighbors. His expansion program was so broad in its scope as to embrace every known source of light fuels, both natural and synthetic, including gasoline from various grades of coal and lignite, benzol from the coking process, and alcohol from agricultural and forest products,

as well as a scheme for the extraction of heavy motor fuels from coal.

Chief emphasis was laid on the construction of plants for the production of gasoline from lignite and coal, and it goes without saying that capacities have been doubled, redoubled, and multiplied under the urgency of war. Indeed, it is quite possible that, when the curtain of censorship is lifted, we shall learn that Germany has made great strides in the development of processes for the production of synthetic motor fuels.

High-pressure hydrogenating plants were built at Bohlen Madgeburg, and at the Scholven Mine in Westphalia. The famous Leuna-werke was expanded; and so, also, was the Ruhland plant, which employs another method.

As the yield of benzol is yoked with the output of coke, which in turn is geared to the demands of the steel industry, which also has been expanded as a feature of the armament program, we may assume that the output of this product also has been increased.

Dr. Egon Glesinger, secretary-general of the *Comite' International du Bois*, wrote in an article published in The Saturday Evening Post, of September 5, 1942: "With great speed and far-reaching implications, a net-work of wood-utilization plants is now rising all over the Continent, and it is geared to Germany's control of the wood supply. * * *

"The question naturally arises, why should the Nazis be so concerned about wood when it is commonly thought that control of oil equals world supremacy? The explanation is that the fuehrer and his aides have come to the conclusion that only through a complete collapse of the United States and Great Britain, which is an unlikely possibility, can they achieve control over oil. Also, the Nazis have discovered that wood is the most versatile of raw materials.

"So much so that the Germans now have an awesome word for wood. They call it *Universalrohstoff*, which means the material which can produce anything.—The Germany army still fights * * * because the Nazis control the forests of Europe and have mastered the technique of wood conversion.

"They have on Europe's highways half a million cars and trucks—all run on wood gas or charcoal. Wood is giving them high-test alcohol, essential in the preparation of smokeless powder and synthetic rubber; it is giving them heavy lubricants, raw sugar, cellulose for cattle fodder, fibers for suits, and 'wooden iron,' which can be molded and used in airplane construction.

"It was Hermann Goering's idea that Germany's salvation lay in wood, and he sold it to the party hierarchy.—He convinced them that with the world's forests and forest products in their hands they would be able to engineer a shift in world power such as had occurred when the British coal age gave way to the Anglo-American age of oil."

Dr. Hans Bahr, of Hamburg, outlined the scope of Germany's many and varied plans for increasing the European output of crude and synthetic fuels in an article published in *Wirtschaftdienst* on July 19, 1940, a translation from which was reproduced in THE OIL WEEKLY of February 10, 1941, from which we quote in part:

A. *Rumania:*
1. Intensification of drilling in the old fields. (Invisible reserves, 293,000,000 to 330,000,000 barrels.)
2. Beginning of production in the yet undrilled fields of Moldavia and Wallachia. (Estimated reserves 1,467,000,000 barrels.)

B. *Germany:*
1. Increase in synthetic production after new 4-JP works begin operations.
2. Considerable increase in petroleum production.
3. Petroleum from (Pechelbronn) Alsace.

C. *Italy:*
1. Increase of Albanian production of crude petroleum to 2,000,000 barrels annually.
2. New plants for hydrogenating lignite.
3. New shale-oil plants.
4. Increased utilization of methane.
4. Increased production of power-alcohol from wood and millet.

D. *Balkan Peninsula:*
1. Successful discovery of petroleum in Hungary (self-sufficient in 1931?).
2. Promising prospecting for petroleum in Yugoslavia and Slovakia.
3. Prospect drilling in Greece and Bulgaria.

E. *Northern Countries:*
1. Extension of Estonian shale-oil plants.
2. Increased utilization of wood-gas generators.
3. Greater production of sulphite spirit.

F. *USSR:*
1. More intensive production in the old fields (invisible reserves, 25,500,000,000 barrels).
2. Development of the new oil fields between the Volga and the Urals ("Second Baku"); invisible reserves estimated at 18,000,000,000 barrels.
3. Third five-year plan provides for an increase of production until 1942 to 394,000,000 barrels annually.
4. Greatly increased capacity for export.

So many sources of synthetic fuels are here enumerated that the idea of a shortage of oils in Germanized Europe is almost dispelled—coal, lignite, coke, potatoes, grains, wines, woods, etc. It would appear that the versatile German can make gasoline out of anything. But his refineries, coking ovens, hydrogenating plants, and distilleries are vulnerable to air attack. A few hundred "blockbuster" bombs, correctly aimed, would knock them all out. No doubt certain refineries and tank farms located at Hamburg and elsewhere on the west coast of Europe already have been damaged or destroyed by the R. A. F.

Dr. Bahr stated that the normal peacetime consumption of petroleum products, as of 1938, totaled 373,220,000 barrels per year for the continent of Europe, including Russia, and he proposed that this European demand should be supplied from Roumania, Poland, Russia, and Albania, which at the time of his writing, were producing crude oils totaling 258,000,000 barrels per annum. To these natural products, he added the production of synthetic fuels, of which, according to his data, Germany and Italy then were yielding about 19,500,000 barrels per year.

Thus, according to his calculations, European oil production of all types fell short of continental demand by some 95,720,000 barrels per annum, on a peacetime basis, and he suggested the conquest of the Near East, as a source of some 119,800,000 barrels of crude oils per year, from which the German deficit might be made up.

"That is to say," he continued, "their production is considerably more than the deficit of our oil balance, as calculated above. Moreover, all these areas are just at the beginning of their productive development and can unquestionably be put in position to produce much greater quantities.

"* * * An elimination of the British imperialism from the Mediterranean Sea attaches these areas closely and, from a strategic viewpoint, safely to the European block, * * *

"The Near East and the U.S.S.R., accordingly, are the two naturally-given neighboring areas to supply mineral oils for the European block * * * "

Germans were flushed with victories when Herr Doktor Bahr wrote in 1940; and he covered too much ground in his blueprint for the Germanization of the oil industries of Europe and Asia Minor. However, by subtracting his figures representing the peacetime requirements of Russia, Turkey, Spain, Portugal, Sweden, and Switzerland, we are able to arrive at a figure of 189,140,000 barrels per annum as indicative of the normal needs of Germany and the conquered nations of Europe.

For comparison, let us take the esti-

[*Continued on page 32*]

Use of Neutron Curves

This recently developed curve appears to offer considerable value either as a companion to the gamma-ray curve, or for solving certain problems regarding formations behind casings when used alone

By A. B. WINTER, Lane-Wells Company

AT THE present time there are two types of curves available in radio-activity logging. One is the gamma-ray curve which is a measure of the natural gamma-ray intensity of the formations; the other is the neutron curve which measures the effect of the bombardment of the formations by a strong source of neutrons. The gamma-ray curve has been in commercial use for over two years and has proved very successful in the location of productive formations behind casing. The neutron curve is a recent development and appears to offer considerable value either as a companion curve to the gamma-ray curve or, when used alone, to solve certain problems regarding the subsurface formations behind casing.

The operating principle of the neutron log is based on the bombardment of the formations by neutrons and the measurement of the effect of this bombardment on an ionization chamber located above the neutron source. A neutron is one of the seven known elementary particles of matter. In the ordinary process of radioactive disintegration only alpha, beta and gamma rays are emitted; neutrons are not emitted. However, there are numerous nuclear reactions which result in the emission of neutrons. A fast traveling neutron has certain characteristics not shared by alpha, beta and gamma rays. For example, fast neutrons are absorbed by water about fifteen times more effectively than by an equal mass of lead. The source of neutrons used in the neutron logging instrument consists of a mixture of radium and beryllium. Most of the neutrons emitted are

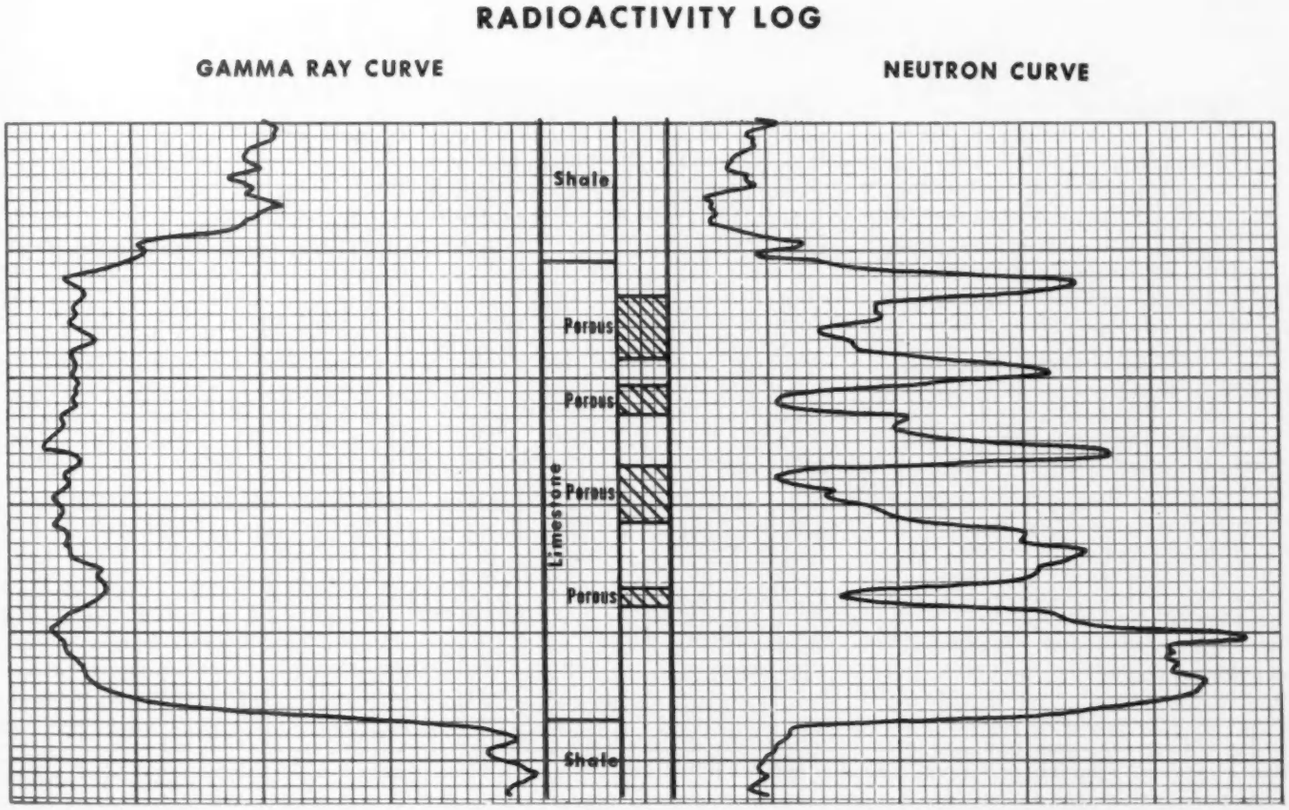


Figure 1

Gamma Ray-Neutron Log of a well in Kansas showing ability of Neutron Curve to indicate porous zones.

fast and extremely penetrating. These neutrons are able to pass through many inches of iron without much attenuation and are slowed down mainly by the hydrogen present in the rocks. The neutron log could be called a hydrogen log due to the fact that hydrogen present in the formations is the chief cause of the change in the intensity of the curve.

The equipment used for neutron logging consists of a subsurface instrument, an electrical cable, a hoist truck and an instrument truck containing the surface amplifiers and automatic recorder. The subsurface instrument is 4⅝ inches in outside diameter and 10 feet in length. The component parts of the instrument consist of the neutron source in the lower section, a suitable shield above the source, the ionization chamber, and the subsurface amplifier. The surface equipment is the same as used in the gamma-ray logging service. An automatic pen and ink type recorder is used so that the actual recording of the log may be observed. The complete log is available immediately upon completion of the survey. The average recording speed is 1000 feet per hour.

Satisfactory logs may be made either with or without fluid in the hole. Due to the extreme sensitivity of the neutron instrument to fluid, it is of vital importance to have the fluid level either above or below a formation of interest. A sudden shift to the right occurs in the log at the top of the fluid which would confuse the interpretation if it occurred in a zone of importance.

In general, the appearance of the neutron log is quite similar to the shallow resistivity curve of an electrical log. It is important to note that the neutron log is an entirely different type of measurement and in many cases there will be a radical difference between it and a resistivity log. One important use of the neutron log is in determining dense limestones or hard sandstones by means of high intensity values of the curve. Another useful feature of the neutron log is its ability to indicate porous zones in a uniform limestone formation. This is made possible by the presence of oil or water in the porous zones which contain hydrogen. This would be true also in a clean sandstone containing very little shale or silty material. However, in the case of sandstones the presence of shale or silty material may easily confuse the interpretation of the neutron log. Porous zones have also been determined in chalk formations.

Generally speaking, shales are the lowest intensity on the neutron log and may be used as a reference value or base line. The reason for this is due to the greater amount of hydrogen normally found in shale, both as connate fluid and as chemically combined water in the shale itself. An increase in porosity is indicated on the log by a decrease to the left in the intensity of the curve. Normally a very porous limestone containing fluid will appear as a low intensity value with slightly greater magnitude than a shale.

It is necessary to use both the gamma-ray curve and the neutron curve to determine the porous zones. We have not been able to determine with only a gamma-ray log whether a limestone is porous or non-porous. However, with the combination of the two curves the thickness of the limestone is defined by the gamma-ray log while the porous zones may be determined from the low intensity values of the neutron log. If there are shale zones interbedded in the limestone body they may be distinguished from the porous zones by the higher intensity of the gamma-ray curve.

It should be pointed out that since both oil and water contain hydrogen no attempt is made at present to distinguish between the two. Another useful feature of the neutron log is in determining the casing seat. Entering or leaving a string of casing is not always apparent on a gamma-ray curve, but usually gives a definite indication on the neutron curve.

Figure 1 is a short section of a combination gamma-ray and neutron log which was run in a Kansas well to determine the porous zones in the Mississippi limestone. Very complete information was available on this particular well and the exact location of the various porous zones was known. It was found that the radio-activity log checked the known well information exactly. The four porous zones are clearly indicated by the neutron log.

Undoubtedly other important uses will be found for the neutron log as further experience is gained with this new curve. At the present time the small additional cost of a neutron log makes it desirable as a companion curve to the gamma-ray curve and aids in obtaining greater information regarding the character of the formations behind casing.

This discussion of the recently developed neutron logging was given at a meeting of the Oklahoma City Chapter of the American Petroleum Institute.

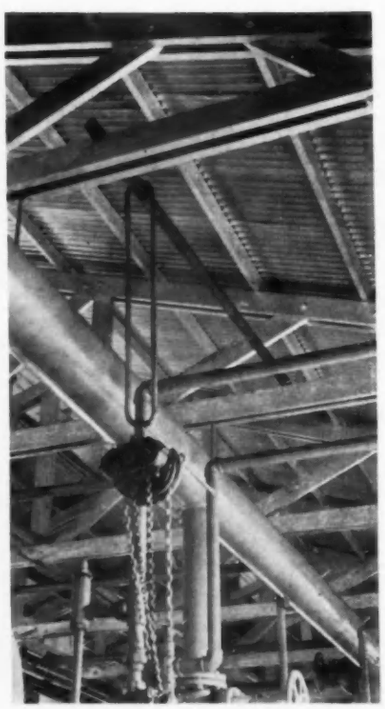
MAINTENANCE HINT

Chain Hoist Support

WHERE overhead clearance permits, the use of the usual joint of 2- or 3-inch pipe as support for the chain hoist used to handle manifolds, cylinder heads and other parts for servicing may be extended without increasing the manpower required. Instead of hanging the hoist from the pipe with rope or chain, an elongated link is built up by the welder, being made with radius at the upper loop slightly greater than that of the supporting pipe.

To shift such a support over the equipment to be serviced, the pipe may be rolled across the roof trusses, the friction at the contact between link and pipe being so slight as to permit free turning and easy spotting.

When a load is slung from the loop, the weight may cause sufficient grip to prevent easy rolling of the pipe to carry the load from over the unit being serviced, but a pipe wrench, or even a length of half-inch line, wound around the pipe, will serve to turn it in the desired direction, and thus give desired traverse to the support.



Pressure Maintenance Success In Highly Lenticular Field

Flowing life of wells prolonged by efficient production methods and small but steady withdrawals, to the end that operators contemplate doubling the normal ultimate yield of the area

By JOSEPH A. KORNFELD

PRESSURE maintenance of the highly lenticular producing formation of the Batesville field has every earmark of being highly successful. Not only is ultimate recovery expected to be doubled, but 75 percent of the total wells in the two regions being pressured are still flowing although the field is 10 years old.

The Batesville field lies in the southwestern corner of Woodson County and laps over into the southeastern portion of Greenwood County, Kansas. It lies at the southeastern terminus of a series of extremely elongate-shaped oil pools trending northwest to southeast into Greenwood County.

Stratigraphy

The Bartlesville sand, principal producing horizon in the Batesville field, occurs in the Cherokee shale series of lower Pennsylvanian age. It is found from 30 to 200 feet above the top of the Mississippi lime, an eroded chert-and-limestone formation of middle Mississippian age. The mode of deposition of the sand is in off-shore bars. Consequently, the thickness of sand varies rapidly from one well to another, reaching a maximum thickness of 35 feet of solid sand in some parts of the field. In the southeastern portion of the field the formation is divided into an upper sand of approximately 10 feet and a lower sand lens ranging up to 29 feet, separated by a 10-foot shale break. Then to the north, the deposition likewise divided into two 10-foot sand lenses separated by a 10-foot shale break.

Other lenses of sand occur in the area higher in the Cherokee shale series and some of these 67 feet above the top of the Bartlesville have carried oil showings, though not in commercial quantities.

Summary of Development

The relationship of the oil accumulation to structure is confined to occurrence of sand lenses of off-shore bars, as hitherto mentioned. The present known productive limits of the field show an overall length of six miles along a northwest and southeast trend and an extremely variable width of from one fourth to five eighths of a mile.

The lack of uniform deposition and occurrence of a high percentage of silt in the sand account for occasional dry streaks, so that in some instances as many as two offsets to a well may prove barren.

The largest initial daily production has been observed in the central portion of the field, where the greatest thickness of sand has been logged. For example, Saco Oil Company's Klick 8, SW NW SW 20-25s-14e, is reported to have gauged 1200 barrels of oil in 24 hours. Sand thickness in this part of the field exceeds 26 feet.

The oil tests from 39.5 to 40° API gravity. It is a paraffin base and sweet.

Depth to the top of the Bartlesville sand averages 1425 feet, or 380 feet below sea level. Surface elevations vary from 954 feet in the northwest corner of the field to as high as 1063 feet in the southeastern terminus.

The Batesville field was discovered during 1932. However, the lack of a pipe-line outlet and the shift in drilling activities to flush producing areas, coupled with severe economic conditions, combined to retard development for the following two years. With a pipe line provided in 1934, development work proceeded.

The principal operator is Bird, Hanley & Sheedy, Wichita, Kansas. They own 2920 acres of leases of which 1140 acres have been proven by completion of 114 producing wells. Other interests have completed an additional 16 oil wells to bring the present producing total to 130. These include Saco Oil Company and Bunch & Barrett.

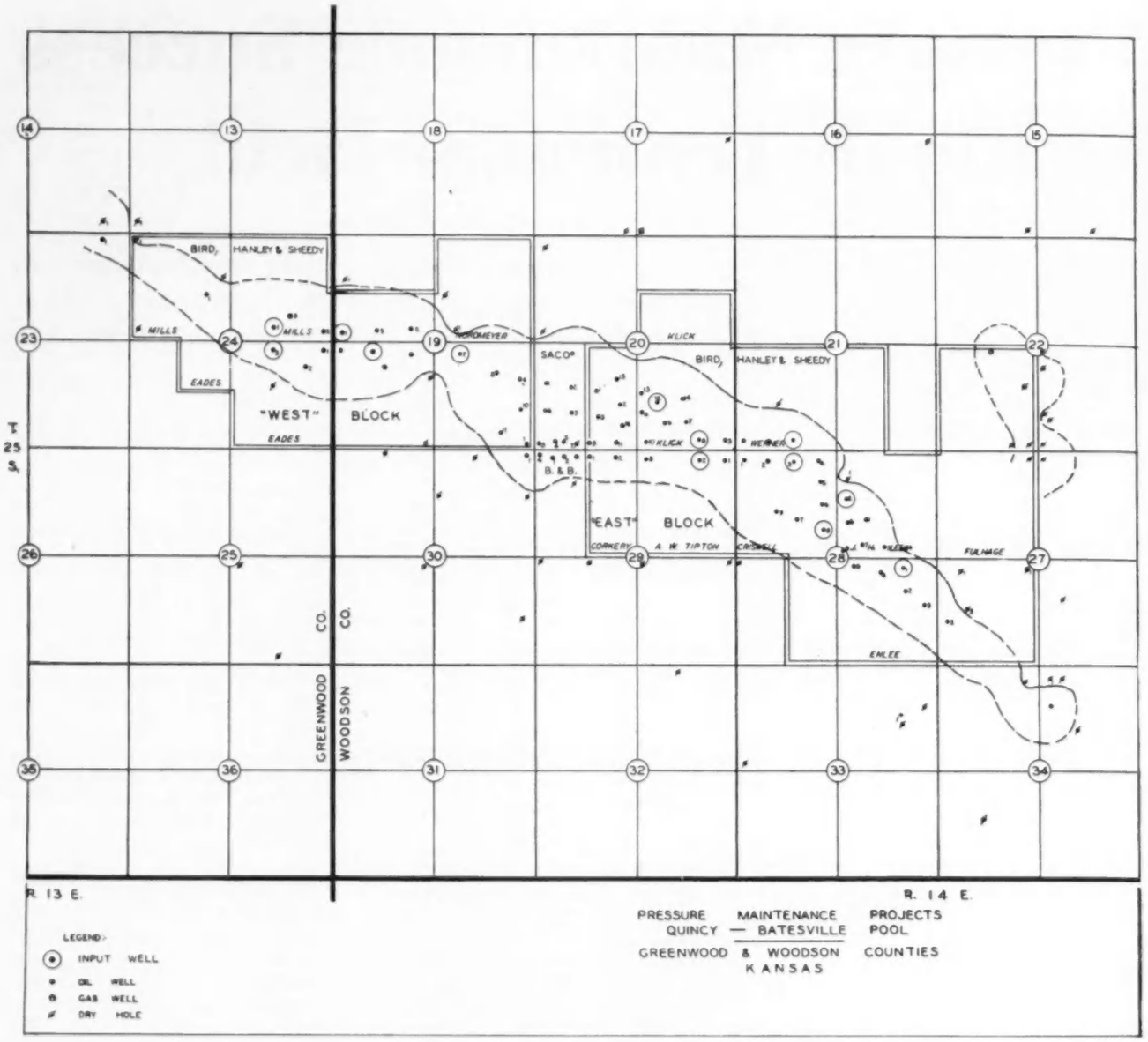
Cumulative oil production to March 1, 1942, was approximately 2,700,000 barrels, or an average of 20,761 barrels per well. Considering that the drilling pattern has followed a 10-acre spacing arrangement, which is attributable to each well, the cumulative recovery per acre is in excess of 2000 barrels on the average.

Pressure Maintenance

The beneficial effect of pressure maintenance which has indicated a doubling of ultimate recovery estimates on some of the more prolific leases cannot be generalized for the field as an average due to the presence of barren streaks and to the extremely irregular shape of the sand lens structure. However, the better leases are expected to produce more than 6000 barrels per acre ultimately, which is considered very satisfactory in view of the stratigraphy.

Pressure maintenance at Batesville was started during 1934 on an experimental basis. This was only two years following the discovery of the field, and at a time when development was under way. There was little disturbance of the field reservoir during the first two years due to the lack of development. Consequently, pressure maintenance may be said to have been commenced when reservoir conditions were near their original stage.

Early gas-injection operations employed only 200,000 cubic feet of gas per day. This was returned to the Bartlesville sand through use of a portable compressor powered by three automobile engines operating in multiple.



This operation was under the direction of Chris L. Sheedy, partner in the Bird, Hanley & Sheedy properties.

Marked success of the initial gas-injection work encouraged the company to expand the program on a much larger scale. Accordingly during 1935 equipment was purchased in the Seminole district of Oklahoma. This included three 90-horsepower compressors. These remained in operation until 1938, when the permanent "East" plant was constructed, employing three 90-horsepower compressors. The East plant, which is connected to eight input wells at present, maintains pressure on that portion of the block located in Sections 20, 21, 22, 27, 28 and 29 of Township 25s, Range 14e.

The "West" block, comprised of portions of Section 19-25s-14e and Section 24-25s-13e, is handled by the West plant through five gas input wells.

Present total volume of gas returned to the reservoirs by the two plants is estimated at more than 1 million cubic feet per day, or more than five times the volume employed at the inception of the program 8 years ago. Present total withdrawals of oil from the field averages 450 barrels daily.

Production Methods

Success of pressure maintenance at Batesville has been correlated with simultaneous application of efficient production methods in the operation of Bird, Hanley & Sheedy properties. These have insured a greatly-lengthened flowing life, so that currently 75 percent of the total number of wells on the company's two blocks are still flowing. At one time, the entire field produced as much as 1600 barrels of oil per day, largely from flowing wells.

These methods include:

1. Use of bottom-hole chokes to control the gas-oil ratio;
2. Constant use of small tubing strings;
3. Low production rates;
4. Elimination of open flow potential tests for long periods.

The slim tubing strings consist of both ¾-inch and 1-inch. This has remained a constant practice since the field's discovery.

The policy of small withdrawals per well and constant production operation as contrasted with large intermittent withdrawals is believed to have created less possible disturbance of the reservoir.

Company officials estimate that pressure maintenance will result in doubling of the ultimate per-acre yield within the limits of the two blocks being pressured.

New Barge Cleaning Service Will Speed Oil to East

New depot featuring more rapid and thorough cleansing to reduce out-of-service time and permit quicker switching from crude oil to gasoline cargoes

By RAY M. THOMPSON

AN OIL barge should be thoroughly cleaned once a year. A clean tank means full carrying capacity, but several inches of sludge on the bottom can reduce its transport volume thousands of gallons.

Gas-freeing and cleaning a tank barge normally means taking it out of service for a week or more, depending upon its fouled condition. And, if it should be necessary, as is quite probable in this present emergency, to switch it from crude oil to gasoline hauling, it must go through several preparatory steps in addition to cleaning.

After hauling crude oil and being cleaned by ordinary methods, the barge must then be used for lighter oil; then used next, for instance, for distillate or kerosine before it can profitably be okayed for gasoline transportation.

In other words, normal cleaning methods are not perfect enough to permit the jump from crude oil to gasoline. Just a small trace of crude is enough to spoil a barge load of gasoline which is why the transition must be made gradually.

That is why barge cleaning is always a mess and a nuisance. So much valuable time is consumed.

On the Harvey Canal, near New Orleans, a new type of barge-cleaning service has just been inaugurated that will:

1. Eliminate the customary preliminary gas-freeing. This step is part of the cleaning process in the new system.
2. Will permit a barge hauling crude oil to be immediately used, after cleaning, for gasoline transportation; meaning that petroleum engineers will find no cause for refusing to issue the necessary gasoline certificate.
3. And, for the tank barge of average condition, the cleaning process will be a matter of only two or three days.

The Harvey Canal cleaning depot is only the second of its kind in the Gulf Coast area, there being a unit at Houston.

This new barge-cleaning system, recently installed by Gretna Machine & Iron Works of Harvey, Louisiana, to serve barge operators on the Intracoastal Waterways, consists of a 150-horsepower Scotch marine boiler, a solution tank with heater coils and a set of powerful pumps to force the hot solution through a whirling nozzle unit which is lowered inside the barge.

The secret of the speed and thoroughness of this system lies in the combination of cleansing materials and the whirling nozzle unit. A solution of cleansing chemical strong enough to take care of the job to be done, is mixed in the solution tank of 1500 gallons capacity. Live steam is forced through the heater coils until the solution is boiling. Then it is driven automatically through the whirling nozzle against the inside of the barge at 100 pounds pressure per square inch—two and one half times that of the average fire hydrant.

The whirling nozzle unit is so controlled that the hot solution contacts every inch of the enclosure with a solid stream.

The triple combination of heat, pressure and a powerful cleansing agent

Cleaning unit installed in manhole. In some instances it was necessary to put unit in manhole at slight angle to clear ladders. Manholes on these barges all were at corners of tanks.

Below: A cleaned section of barge side.

specially compounded for this job removes all traces of crude or fuel oil from the barge interior. Hardened and coated sludge or paraffin adhering to the surface is broken into minute particles and washed away with no resulting corrosion.

As the barge to be cleaned is either hauled up on the ways or listed in the water, the solution with its emulsified oils and sludge is carried to one end or corner where it is removed by pumping.

The last step is the hand spraying behind structural members which the automatic unit could not reach—and the job is complete—spotless.

The barge cleaning process just described is new but not experimental.

Right now with every second and every gallon counting in the fight to keep vital petroleum products moving East, this rapid, thorough method of barge cleaning that knocks days off the accepted time for such a job will also help knock the heels on their Axis or the Axis on their heels, as you prefer.

We must collect scrap OVER HERE

☆ THE STEEL Industry of America will require 6,000,000 tons of scrap, over and beyond the regularly available supply, during 1943 to convert into fighting steel for our military needs.

It is not going to be an easy task to collect this 6,000,000 tons of scrap, for the Scrap Drives of 1942 collected the easily available scrap. It is available, however, in the homes, the manufacturing plants, on the farms and in the oil fields—but it will have to be *DUG OUT* to get it rolling to the scrap piles.

This is everybody's job—the private citizen in his home, the employer and employee in their business and in their manufacturing plants. It cannot be spasmodic—it must be constant if vital War Production is to be maintained.

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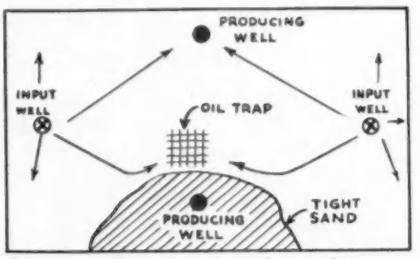
Executive Offices: Pittsburgh, Penna. • General Sales Office: Toledo, Ohio • Division Offices: Fort Worth, Texas; Tulsa, Okla.; Torrance, Calif. EXPORT: The National Supply Corporation, 30 Rockefeller Plaza, New York, N. Y., U. S. A.; River Plate House, 12 South Place, London, E. C. 2, *Limited Liability.*

Preventing Oil Traps in Pressured Sands

By F. R. COZZENS, Equity Oil and Gas Company

WHEREVER oil is forced through a body of sand by artificial pressures (air, gas or water) there is likely to occur a situation where force from one point of induction meets force from another induction point. Oil carried along before each separate force is trapped, or locked between counter-pressures, and is thus held indefinately while the operator wonders why his recovery project fails to yield the anticipated amount of production. Oil traps in sands under secondary recovery are far more numerous than generally supposed. A great many operators have but recently awakened to this fact, and also to the fact that the situation generally occurs from some technical detail which has been overlooked. Such traps may, and often do contain hundreds or perhaps thousands of barrels of otherwise recoverable oil which is invariably lost unless the obstacle is prevented or removed.

Modern improvements in the technique of sand-pressuring have eliminated many of the common causes of oil traps, one outstanding preventative being the present method of five-spotting, or seven-spotting a sand-area, so that the point of pressure induction, or input well is located in the center of the pattern. But even the best arranged pattern bears watching. An oil sand is a highly complicated structure, and it sometimes happens that one or more of the producing wells are drilled into an area of sand which is tighter, or differs otherwise radically from the formation in the input well. Such producing wells generally are shot with varying amounts of nitro-glycerine, but the secondary-recovery operator must also keep in mind that the shell must be placed in a selected position in the sand, so that the restricted zone is fractured to and through its boundaries. Otherwise, pressure from the input well will force its head of oil through the more porous sections of sand, around the tight, restricted zone, and upon meeting counter-pressure from the input well in the next pattern, a very stubborn oil trap is formed. Acting upon a similar principle, a producing well carrying a constant head of salt water, because of its saturation into the sand, will result in a deflection of oil around that particular zone. The operator, alert to the possibility of oil traps, will keep the water head down by more constant pumping or in radical cases, cement off the water zone.



Oil trap resulting from irregular sand permeabilities deflecting direction of input pressure.

One fundamental objective in sand pressuring is to have forces from opposing input wells to meet, nearly as possible in an area of producing wells. An input well with leaky packers, or with packers set too high or too low in the sand delivers an irregular and feeble pressure, often just sufficient to force oil only a short distance from the input zone. Normal pressures from the other inputs, traveling faster and with more strength, reach the producing wells first, and finding no counter resistance, they move on to trap quantities of oil between the producers and the weak input well. In air or gas pressuring, such traps generally can be released by greatly increasing pressure for a time on the faulty input (after repairs are made), while pressures on nearby inputs are reduced in proportion.

In the case of water flooding, however, this treatment is not practical because the counter pressure generally is a back flood and the oil cannot be forced through a water-soaked sand. In an effort to build up air pressure in a sand that is extremely porous, a mistake sometimes is made by allowing certain producing wells to become air or gas locked. Not only is production in such wells hindered, but the locked pressure tends to set up a barrier which can in a very short time become sufficient to prevent oil from reaching the pumping zone. An even more serious mistake is made in allowing original producing wells which have not been cleaned and reconditioned. A dirty well never makes a profitable producer, and a sand face clogged with paraffin and sludge often can resist more force than the input wells can provide, so that much of the oil is trapped behind the barrier.

Some oil sands are more susceptible to the forming of oil traps than are others, but no sand capable of artificial pressuring is exempt. And as is usually the case with other oil-field difficulties, an ounce of prevention is worth many pounds of cure. In the Eastern stripper fields where a wide variety of sands provide ample opportunities for research and study, it is found that the oil trap problem can best be solved: 1. By arranging input and producing wells as nearly as possible in a predetermined pattern; 2. By keeping wells and recovery equipment in good working condition, and 3. By closely observing the behavior of the wells.

No two wells can be expected to react in the same manner, but after the pressuring has been conducted for some time the wells become reliable indicators as to what is going on in the sand from which they produce. A well which responds too slowly in comparison with others in the pattern, suggests a too tight or restricted sand zone, or some mechanical barrier. Wells which have been in steady production, and begin suddenly to fluctuate and dwindle without apparent cause, usually indicate weakness in sand pressure, at or very near the producing zones. Wells, building up sudden and abnormal heads of salt water with a receding oil output, often reveal that too high a pressure is being inducted into the low, or water-logged sections of sand. Conflicting, or counter pressures which meet outside a producing zone often may be detected by an abnormal kick back or a sudden building up of pressure in the input well. These, and similar observations are easily checked by keeping daily well records on production and input. Once this practice has become established, prompt adjustments can be made to prevent formation of oil traps, and the result in more than 80 percent of the cases is a substantial saving in oil plus a far more effective oil recovery.

Announcement

U. S. Patent No. 2,294,877

CHEMICAL TREATMENT OF DRILLING FLUIDS

This is to announce that Baroid Sales Division has obtained from Visco Products Company (sole Licensee under the above patent) the exclusive right to negotiate licenses under the above patent.

The patent covers the treatment of well drilling fluids with the following classes and combinations of chemicals:

1. Water-soluble polyphosphoric acid compounds. (For example, sodium hexametaphosphate, sodium pyrophosphate, sodium acid pyrophosphate, sodium tetraphosphate, certain organic polyphosphates, etc.)
2. Water-soluble polyphosphoric acid compounds in connection with lyophile colloids. (Examples of lyophile colloids are: chestnut extract, quebracho extract, lignins, etc.)
3. Water-soluble polyphosphoric acid compounds in connection with buffers. (Examples of buffers are: soda ash, orthophosphates, etc.)
4. Water-soluble polyphosphoric acid compounds in connection with lyophile colloids and buffers.

Licenses under the said patent are available to Oil Companies and others engaged in drilling wells, on a royalty basis per pound of chemical employed by them in the treatment and use of well drilling fluids in accordance with the said patent, whereby Licensees may purchase the said chemicals from any seller thereof. Under the terms of the proposed License Agreements, which are issued by Visco Products Company, the Licensee has the option of terminating the agreement at any time upon 60 days written notice.

To those who are not thoroughly familiar with the subject of the chemical treatment of well drilling fluids, we should like to point out that Visco Products Company pioneered the development of chemical treatment of drilling fluids, their product "Stabilite" having first been marketed for this purpose in 1930. Baroid Sales Division, as exclusive distributor of the various improved "Stabilites" marketed since that time, takes considerable pride in the fact that it has played an important part in the development of present-day chemical treating methods.

We also wish to announce that, notwithstanding the issue of the patent, there will be a substantial reduction in the price of "Stabilite," effective February 1, 1943.

For complete details of the License, Oil Companies and others engaged in the drilling of wells are kindly requested to communicate with Baroid Sales Division, National Lead Company at 830 Ducommun Street, Los Angeles, California, specifying the particular chemicals they desire to use under the patent.

VISCO PRODUCTS COMPANY
STERLING BUILDING
HOUSTON, TEXAS

BAROID SALES DIVISION
NATIONAL LEAD COMPANY
LOS ANGELES, CALIFORNIA

Static Charges and Their Relation To Pipe-Line Currents

By NORMAN CLARK

FOR some time it was thought that to completely protect a pipe line from corrosion, one needed only to apply a perfect coating of protective material. This paved the way for considerable research in paints and their methods of application. The perfect pipe-line paint was sought for, and, at the present time still remains to be discovered. With the best coating used, pipe lines continue to carry small charges. It is with the origination of these small currents that we are primarily interested.

Line currents are originated from battery cells formed by immersion of the line and dissimilar metal fittings into ground water, from iron and rust when laying in the ground water, and by the rusting of metal when exposed to moist atmosphere.

Pipe lines exposed near large sources of direct current, such as electric railways, pick up currents and transfer them to remote distances before discharging them to the soil.

In bare lines, therefore, the exact cause for the presence of electric currents on a pipe line is indeed difficult to determine. Any or all the foregoing derivations may be responsible for the presence of the currents. On well-coated pipe lines, however, the causes of current mentioned above are diffcult to apply both in theory and in practice.

By a well-coated pipe line it is meant one that is coated with one of the better grades of pipe-line enamel, applied with an outer coating of tar paper. The tar paper wrapping is to prevent the erosion of the enamel coating by soil stresses.

It is the opinion of most authorities that even with the best of pipe-line coatings, holidays or pin holes are numerous. This is demonstrated by the use of the holiday detector which operates in principle by applying a large direct pulsating current to the pipe line which in turn causes a current discharge through nearby holidays on the pipe-line coating. The current discharge is picked up on feelers and made detectable by various mechanical methods. When in operation the holiday detector indicates a pin hole in the coating.

The size of the hole necessary to allow current discharge is not determinable. It is reasonably certain that a current of electricity will be transmitted through a smaller hole than will ground waters, so it is not unreasonable to believe that electrical discharges by sparks or arcs will occur in holes too small to allow water entry which will cause galvanic cells to be formed on the pipe line. The pipe-line metal must be immersed in the ground water before a cell will be formed and a current generated thereby.

Similarly, when the principles of the wet cell, formed by the pipe line laying in two types of soils, is reviewed, it is obvious that the pipe here also must lay in contact to the electrolytes.

Stray currents from sources of power provides an excellent explanation for generation of the currents on pipe lines, but strange enough pipe lines usually lay many miles from industrial centers.

The electrochemical theory of battery action and the stray current ideas are adequate explanation for the origination of all pipe-line currents on bare lines, but they are inadequate for the origination of small currents on well-coated lines.

Generation of a charge on the line by fluid friction in the line must be considered as a source of pipe-line currents. There must be some quantitative research on the subject before accurate determinations can be made. Static electricity in relation to corrosion has been neglected, not because of an oversight on the part of the pipe-line industry, but probably because of the consensus of opinion being more in favor of the electrochemical theory. Although static charges may be of secondary importance to pipe-line corrosion, data and reasoning is given here to show that they are of concern.

The following picture is given by Pearson in his recent works in static electricity:

When any two materials come in contact, there exists at the point of contact a "contact-potential difference." The contact boundary acts like a condenser with a positive charge on one plate and an equal negative charge on the other. The potential difference is of the order of a few hundredths of a volt, and the charges on opposite sides of each square inch of the boundary are in proportion to this voltage. The total charge separated, therefore, is proportional to the area of contact and to the contact-potential difference. Incidentally the positive charge usually shows up on the material that has the higher dielectric constant. This is not true, however, in every case due to the effect of temperature and moisture content of the material of the surroundings.

The dielectric constant "e" measures the relative force with which two oppositely charged plates attract each other with the given material between the plates as compared to air between the plates, and is quantitatively determined as follows:

$$C = \frac{Q}{E} = \frac{I \times T}{E}$$

where,
C = Capacity of the condenser in farads.
Q = Quantity of electricity on the condenser in coulombs.
E = Potential difference across the terminals in volts.
for a given condenser,
if, C_{air} = Capacity with air separating the plates,
and, C_x = Capacity with a given material separating the plates,

$$\text{then, } e = \frac{C_x}{C_{air}}$$

where,
e = dielectric constant of the given material.

If the two materials are separated from contact, a very perceptible force is required to pull apart the separated negative and positive charges. As work is done against this force two things happen: The voltage difference between the charges increases, and the charges begin to flow toward each other along whatever path is available. In one extreme, when both are good insulators, the charges are pulled apart mechanically so much faster than they can

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VISCO PRODUCTS COMPANY, INC., Houston, Texas

reunite by flow that the voltage increases from the original few hundredths of one volt to several thousand volts. In the other extreme, when semiconductors or good conductors are separated, the charges reunite very rapidly and the phenomenon is represented by the flow of the small and harmless currents mentioned above.

The usual contaminants in pipe-line fluids are basic sediments, water, and finely divided iron oxides picked up in the line through turbulence of flow. These contaminants form the more active elements for the occurence of contact potential differences wherein static charges originate. During pipe-line flow the active contaminants in the pipe-line fluid are brought into contact and torn away from the walls of the pipe thus creating small line charges. A charge once generated on a line will tend to flow in the direction of its least resistance toward its opposite charge.

In bare pipe lines small charges generated from fluid friction will readily be absorbed by the earth at the point of origin through direct contact on the metal, through the superimposed battery action of the abundance of galvanic cells, through the battery action set up by varying soils, and through stray electric currents imposed upon the line.

In the coated lines the picture is different and currents derived from fluid movement within the lines, although small in capacity, are sufficiently large to be of importance. A comparison of rust on a metal coupon attached to a coated pipe line to rust on a coupon in the soil nearby shows the significance of the currents generated within the pipe. Likewise from many observations of the rusting characteristics of coated pipe lines is revealed that lines rust through completely in a very short time at spots exposed through the coating.

TABLE 1

Four-Month Coupon Test

Coupon Sta. No.	COUPON DATA	
	Line Coupon Wt. Lost, gm.	Soil Coupon Wt. Lost, gm.
1	9.00	.40
2	1.20	.50
4	2.25	1.90
3	2.80	1.70
5	1.90	.90

Some operators had rather lay a pipe line bare and let it decompose evenly and entirely than have a continuous maintenance of a coated line. It is the assumption that the cost of reconditioning and cost for coating will be more than the cost of a new line by the time a bare line will be junked through corrosion.

The advent of cathodic protection has, to a great extent, altered the corrosion picture. A small amount of electric current can be applied to a well-coated line and completely protect it from corrosion at the points where the coating is broken and normal line currents tend to drain. A much greater amount of current must be applied to a bare line at shorter intervals to absorb or drain the currents thereon. Many economic factors are involved for the pipe-line operator to consider before determining a protection policy to pursue during the operating life of the line. The operating life depends upon the protection policy which in turn is, at present, dependent upon many qualitative views on corrosion.

The table shows the comparison of metal lost on 1½ x 3 x 3/16-inch iron coupons connected to the pipe line and the same size coupons in the soil nearby in areas of pipe without cathodic protection applied.

Acknowledgment

The author wishes to thank the executives of Barnsdall Pipe Line Company for the privilege of publishing the information contained in this paper.

Suggested References

Pearson, J. M., "Protection Against Static Electricity," Oil & Gas Journal, Nov. 14, 1940.

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Germany's Oil Situation

[*Continued from page 18*]

mate of crude-oil production totaling 66,711,000 barrels per year and add to it a figure quoted by Michael Lewis[1] from "Index of Germany's Coal Liquefaction Plants," wherein it was estimated that carbonization plants (producing lignitic tar, light oils, and semi-coke), hydrogenating plants (processing tar and coke), and plants using lump coal as a raw material would have an aggregate yield of 44,500,000 to 47,500,000 barrels by the spring of 1942, as follows:

	Barrels
Estimated Crude Oil Production, Germanized Europe, 1942	66,711,000
Synthetic, 1942, from "Index"	47,500,000
Indicated Deficit	74,929,000
Total Peacetime Demand, from Dr. Bahr	189,140,000

[1] The Oil Weekly, July 27, 1942, page 65.

It is within the realm of probability that this indicated peacetime deficit has been met from synthetic sources. If the Axis had 19,500,000 barrels per year of synthetic production in 1938, as reported by Dr. Bahr, then a five-fold increase in such plant facilities would have been sufficient. Thus, we are inclined to agree with other observers who have stated that the German block in Europe now is normally self-supporting as regards motor fuels.

This, parenthetically, is a thought which may be pondered soberly by American producers of crude and refined products, who thus may be robbed of their former markets in Europe.

What is the relationship between normal needs and wartime demands? V. R. Garfias, writing in The Oil Weekly of October 16, 1939, suggested a relationship of 10 or 20 to 1, as a basis for the comparison of military and civilian demands. If the 10-to-1 ratio is correct, then Germany still is woefully short of oil.

The problem, however, no longer is solely one of supply. It is now essentially one of transport, in European regions where pipe lines virtually are unknown, whose coast lines are blockaded by the British navy. We learn from current dispatches that Allied air forces are concentrating their attacks on railway locomotives. This writer has long been an advocate of selective bombing, to be directed at refineries, hydrogenating plants, tank farms, loading facilities, etc., believing that the *Wehrmacht* can be stopped cold by breaking any one vital link in its chain of oil supply; but, perhaps, the selective bombing of locomotives will do as well.

Junked Auto Parts Make Emergency Service Unit

WHEN priorities and manufacturer conversion to war materials shut off ordinary channels for obtaining equipment, the oil operator, faced with the need for maintaining or even augmenting his production from certain fields, must rely upon native ingenuity and available materials for meeting his needs.

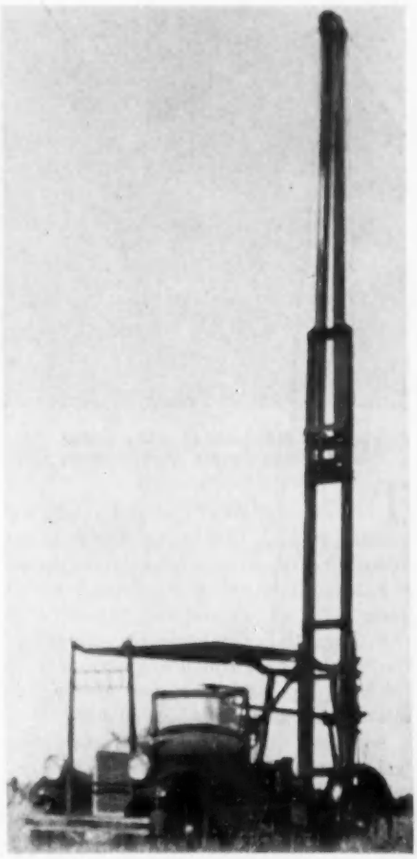
Admittedly not as attractive in appearance or as efficient in operation as a "store-bought" servicing machine, one inexpensive substitute for the engineered article was built up from second-hand automobile parts which is serving on wells up to 600 feet.

The total cost of the machine, including labor and parts, amounted to $400.00. All necessary parts were obtained from automobile wrecking yards. The engine and chassis of a 1927 Studebaker sedan were used, the engine furnishing both the motive power and power for the hoisting drum. An extra Studebaker frame is bolted above the machine and serves as a support for the mast when moving from one location to another. The 31-foot mast is made out of 4 x 6 timbers, a pulley being placed about midway on the mast to raise it to the proper height. The mast can be lowered or raised by one man.

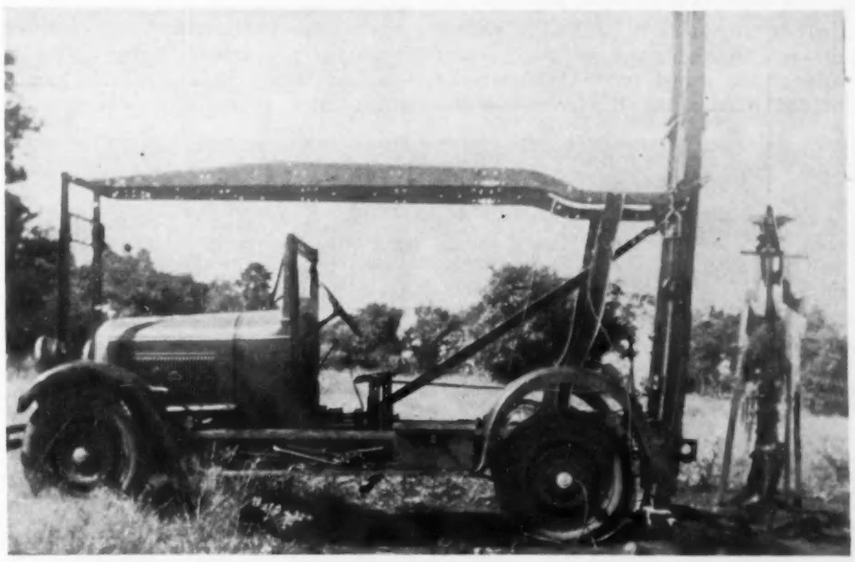
An extra transmission is placed directly behind the original transmission. This connects to the universal joint which drives the wheels. This extra transmission is used to disengage the rear wheels while the motor is being used for pulling purposes. Between these two transmissions a timing gear is used on the shaft with a chain to furnish power for a third transmission and rear-end which is the hoisting drum. The hoisting drum is made out of a 1929 second-hand Oldsmobile rear-end. The drum itself consists of a 20 x 6⅝-inch piece of casing and is made by bolting the two car brake drums on both ends of the piece of casing. The drum is built on an Oldsmobile rear-axle to the right of the differential. The brake drums of the 1929 Oldsmobile serve as the brakes for the hoisting drum. The two extra transmissions used in this machine came from second-hand 1929 Chevrolets. All moving parts run on ball bearings and are grease lubricated. The machine is put together entirely by bolts and no welding is required.

The operating controls of the machine are all mounted on the left rear-end and include a gear shift, accelerator lever mounted on the gear shift, brake, and clutch control. The clutch control is foot-operated and other controls are hand-operated.

Six forward speeds can be had on the drum and almost any gear ratio desired can be obtained. The machine operates on one gallon of gasoline per hour and can be rigged up in a very short time over a well. The machine can be moved from one location to another without lowering the mast, but this practice is not recommended where the distance is very great. The machine is also suitable for bailing and running sand pumps. On small shallow wells where economy in cost of equipment and pulling expense is highly important, this machine answers the purpose.



The telescoping service frame is 31 feet overall, with a pulley let into the center structure to assist in elevating the top section. Made from 4 x 6 timbers, and guyed four ways, this frame has ample strength for pulling rods or tubing from 600-foot wells.

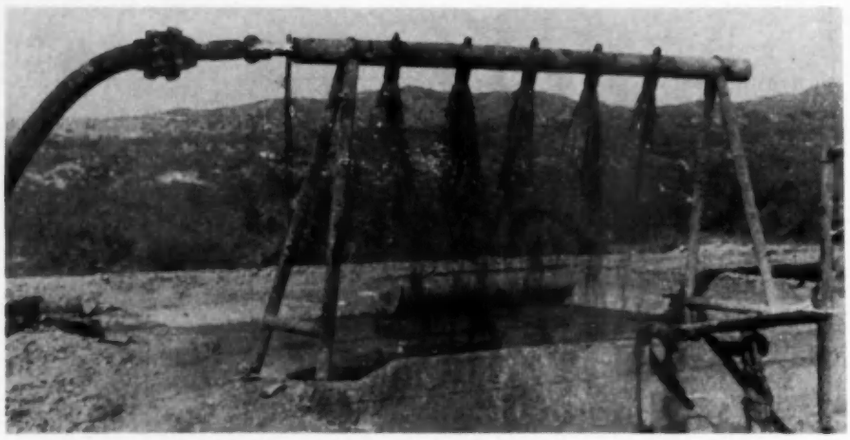


An old chassis, old frames and a few bolts combine to make this combination brace and transportation unit for stubby servicing frame, original auto motor powering driving unit and line drum through coupled transmissions and short chain drive salvaged from timing gears.

PRACTICAL OPERATING *Hints* FOR

1. *MUD CONDITIONING*

Degasification Aided By Adjustable Nozzles



A 4-inch header, mounted above a mud-settling box, is provided with wooden cones at series of 2-inch pipe nipples. Through bolts permit setting of annulus between plug and pipe.

THE separation of gas and coincident cooling of high density drilling mud are required to permit recirculation under the difficult working conditions met in such fields as Tupungato, Mendoza, in the Argentine Government operations. To meet these dual requirements, a hook-up has been designed and put in operation which gives desired separation.

A series of 2½-inch nipples was welded to a 4-inch header, each equipped with adjustable conical wooden plug. The mud is sprayed in thin sheets through the annular space between nipple wall and plug surface.

The adjustable conical plugs are carried on threaded bolts which extend through the nipple and out the opposite side of the 4-inch pipe through nuts welded outside the header. Thus the annular aperture between plug and nipple may be adjusted to any desired width by screwing up on the bolt and drawing the taper of the cone closer to the diameter of the pipe nipple.

This hook-up, suggested by one of the government tool-pushers, has solved the serious gas condition encountered in Mendoza, making it possible to complete successfully one of the deepest wells in South America.

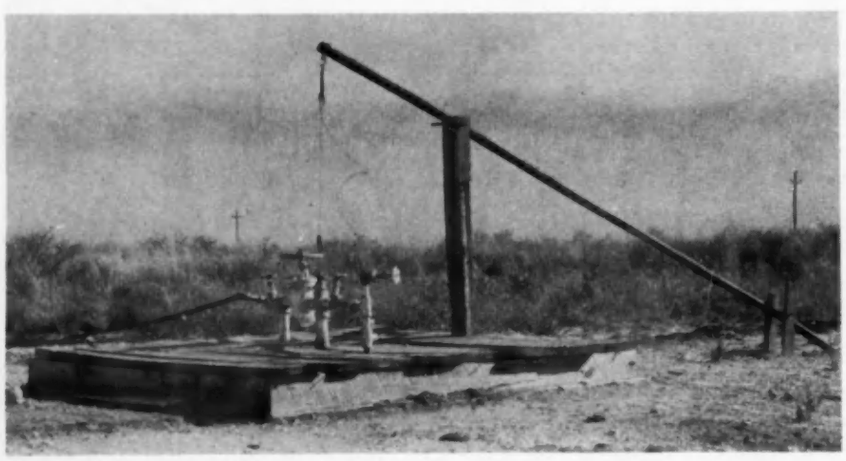
2. *GAS LIFT*

Extended Lever Trips Seldom Used Control

ON CERTAIN wells equipped with intermitter valves, it is necessary to operate the valves only infrequently to maintain production. Rather than to have elaborate surface control equipment, such as would be required for automatic control of the intermitter such types of well demand, operated as infrequently as twice a week, one operator arranged an effective manual system.

The control wire is attached to the customary weight bar for operating the intermitter valve. This particular well tends to flow, and requires but two unloadings by the intermitter valve per week to keep it producing. The wire, instead of being attached to the usual surface control mechanism, is carried on one end of a long pipe, pivoted near the well and supported on a pin to allow movement in a vertical plane.

When the long end of the lever rests on the ground, the weight of pipe balances the 120 pounds of the intermitter weight bar, holding it in the clear. To operate the well mechanism, the bar is lifted, allowing the weight to trip the valve. Lowering the lever to normal position again clears the weight. To insure against unauthorized operation of the device, a method for locking the lever in the "clear" position is provided through stakes at the outer end.



A long 2-inch pipe, normally blocked—if need be, locked—between supporting pins, carries actuating weight bar, and trips kick-off valve when lever is freed and raised manually.

3. *PROTECTION*

Venting Safeguards Air-Raid Precautions

Vent pipe carried far above top of sandbagging insures dissipation of gas outside hazard zone.

PROTECTION against possible bombing damage, as well as effectively hampering possible sabotage, of a flowing well is being provided at exposed West Coast points by covering with sandbags, stacked around the equip-

THE PRODUCTION MAN

$5.00 will be paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, Houston.

ment in the shape of a truncated cone.

All control valves are equipped with extension stems, fitted with universal joints, before the sandbagging was done, and the wheels mounted on the extended shafts outside the protection. To provide required vent protection, and also to eliminate trapping of possible gas leakage within the sandbagging, a long riser is attached to the Christmas tree and carried well above the top of the cone.

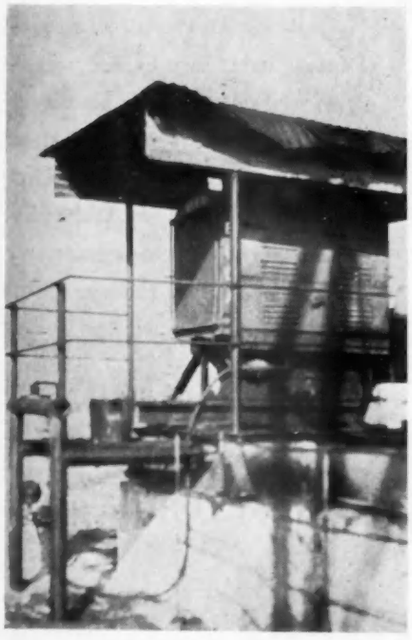
While such a protection would not be proof against direct hit by even a relatively small bomb, it is considered amply effective against fragments or hand-thrown explosives. The top of the vent pipe is elevated sufficiently so that any leakage is carried to a height where, if ignited, no damage could result to well or fittings.

4. *INSTALLATION*

Extended Platform for Foundation Block Use

WHEN an individual-drive pumping engine is set at an elevation, as where a high concrete block or sub-base originally used while drilling the well is utilized for mounting the pumping drive, the starting crank of the engine is frequently set so high as to constitute an unnecessary operating hazard.

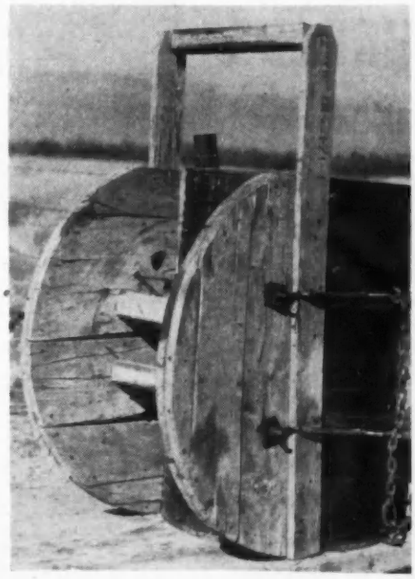
To get around this difficulty at its wells, one company builds extension platforms by welding horizontal pipe nipples to the engine skid foundation, supporting the outer ends with pipe uprights on concrete footing. A light flooring affords working space, while rails improvised from old sucker rods enclose the added space.



Braced to the derrick foundation, this welded extension provides working space at drive unit level.

5. *LUBRICATION*

Halved Spool Serves As Drum-canting Aid



Chains and turnbuckles, attached to through bolts of cradle, hold drum firmly as handles turn unit.

ONE very economical and easily constructed means for tilting drums of lubricants and other liquids is that shown in the photograph. This device enables one man very easily to pour liquids from the drum without the danger of accident or loss of any of the contents.

The rocker, constructed by sawing an old wire-line spool in half, properly reinforcing the section used with rods through the body and bolted to the outer flanges, is secured to the drum by hooks and chains. Scrap lumber arms are spiked across the diameter of the spool to control rocker while tilting the drum.

Only scrap materials were used in making this device, yet it is suitable for the job and facilitates the work of the lease man.

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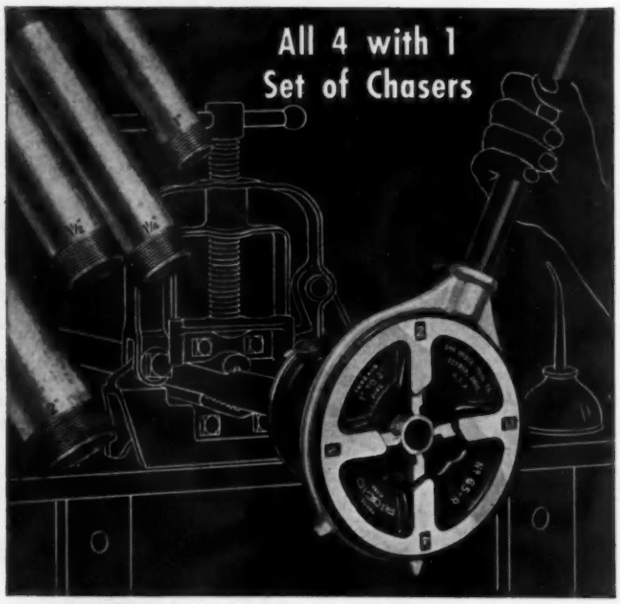

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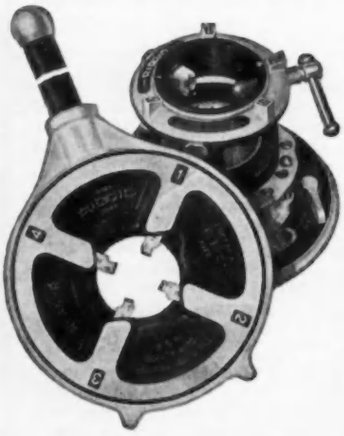

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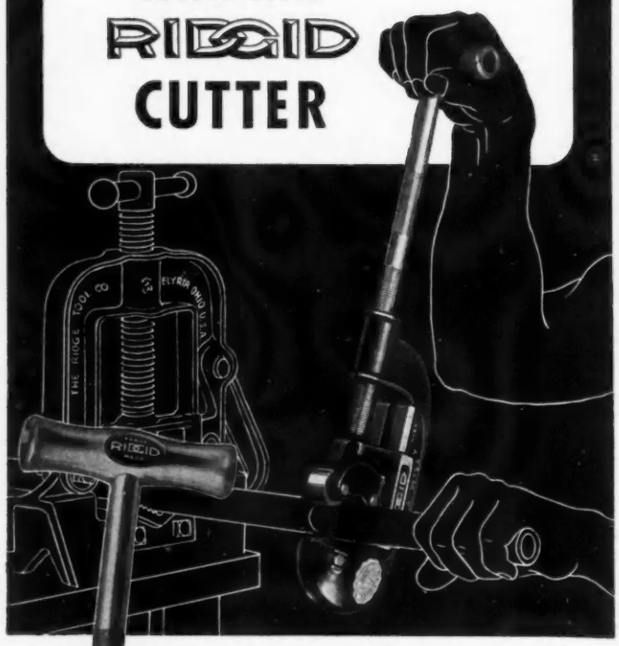

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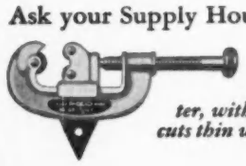

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New OPA Head to Make Early Study of Oil Situation

»

WPB Expected to Approve Second Pipe Line to East Coast

»

Production in February Will Be 38,100 Barrels Higher

»

By B. F. LINZ
Washington Correspondent

☆ ☆ ☆ ☆

POSSIBLE changes in the rationing program were seen in Washington last week as former Senator Prentiss M. Brown of Michigan took over the helm at the Office of Price Administration but the Eastern situation gave no indication of improvement which would permit any relaxation of present restrictions on fuel oil and gasoline.

Taking over from Leon Henderson, Brown said gasoline and fuel oil questions would be studied immediately, but while he expressed a desire to ease the restrictions he admitted that conditions might make it impossible. Suffering from low temperatures which in some places threatened to make new records, the East and Middle West dug deep into the dwindling stock of fuel oil in what was, in some sections a vain effort to keep warm, but officials were forced to admit there was little they could do to alleviate the situation. In the 17 Eastern States and the District of Columbia, where previous efforts to fight off an oil famine included a 25-percent reduction in the gallon value of gasoline coupons, a flat ban on pleasure driving, a 10-percent cut in heating-oil rations for householders and much heavier cuts for commercial and industrial consumers of oil for both heating and non-heating purposes, PAW on January 21 prohibited use of tank cars for gasoline.

February production of petroleum liquids will be increased 38,100 barrels daily under allocations announced by PAW January 21, but will be 149,200 barrels under the actual production in February of last year.

Dissatisfaction continues to mount in Congress over the lack of progress of the synthetic-rubber program, heightened last week by the disclosure that large quantities of precious natural crude rubber were being taken from our own scanty stock pile for shipment abroad, and there were threats of legislation compelling full-speed prosecution of plans for new rubber plants, probably directed mainly to plants to produce alcohol from grain.

Politically-Minded OPA May Boost Oil Since "Slow, Orderly Rise Is Inevitable"

Legality of the OPA order banning pleasure driving in the East and steps to build up fuel-oil stocks this summer in anticipation of next winter's needs will be among the first questions to be studied by Prentiss M. Brown, new head of the Office of Price Administration.

Sworn in as successor to Leon Henderson January 20, Brown held a press conference within a few hours, at which he revealed that gasoline- and oil-rationing problems are near the head of his agenda. Brown told his conference that a slow, orderly rise in prices is inevitable under present conditions. He was referring principally to the cost of living, but in some quarters his statement was interpreted as meaning that prompt consideration may be given the long-pending application for an increase in crude oil prices.

Brown will have full information regarding the oil situation available when he takes the matter up, the tariff commission having just completed its long investigation of crude prices, a report on which has been sent to OPA.

The new administrator indicated that he would take no precipitate action on all of the problems confronting him. His first two weeks in office will be spent in studying OPA regulations, and also in conferences with members of Congress regarding the organization of the agency, which is seen as now being put definitely on a political basis. Much of Henderson's difficulty with Congress was caused by his refusal to select politically "right" men for key positions, a situation which the more politically-minded former senator is expected to avoid.

Brown said that the fuel-oil situation was of considerable concern to him and that he intended to begin planning now to see that next fall will not bring a repetition of the uncertainties to which consumers have been subjected this year.

Questioned regarding his views as to the legal authority for the ban on pleasure driving and the imposition of penalties for violations, he said he would study the law.

At about the same time, however, a move was initiated in Congress to outlaw the ban, Representative Hall of New York introducing a bill to prevent the use of sanctions by OPA through withdrawal of ration cards.

As he prepared to leave Washington, former Administrator Henderson submitted his final report to Congress, warning that economic stabilization in the second year of war, stiffer taxes, "firmness and toughness" in the control of prices and incomes, and broadening of the rationing program. Reviewing his rationing activities, he recalled the "very considerable criticism" to which mileage and fuel-oil rationing have been subjected. "In part," he said, "this has been due to the sheer magnitude of the task and the speed with which it had to be accomplished, and in part to lack of experience in the planning and administration of rationing.

"In part this criticism has been based on public misunderstanding of the gravity of the supply situation and of the procedures developed to meet it. This misunderstanding was, furthermore, deliberately encouraged by parties adversely affected by the program."

Tariff Committee Cost Study Report Ready Soon

Investigations of costs of crude production undertaken by the Tariff Commission at the request of OPA have been completed and a full report is being prepared covering the period from January, 1939, to August, 1942.

The detailed report is expected by the commission to be completed for publication within a week.

Designed to assist OPA in regulating crude oil prices, the inquiry involved the collection of data from more than 2500 producers accounting for about 70 percent of the domestic production.

The initial study covered all the principal fields, as well as many of lesser importance, and provided information on costs, number of wells operating, proved acreage and estimates of economically recoverable reserves for the years 1939 and 1940 and the first three quarters of 1941. A second survey on a smaller scale carried the cost figures from October, 1941, through July, 1942, for the purpose of studying the trend of costs following September, 1941.

Filling Stations Required To Open Standard Hours

Standard hours of operation for service stations throughout the country are to be required under a PAW order permitting dealers to operate either 12 hours a day for six days a week or 24 hours a day for seven.

It is provided, however, that where a dealer elects to go on a day-and-night basis, he may serve all customers only for 12 consecutive hours for six days of the week and for the remaining time must limit his operations to holders of "T" cards.

Expect Early Approval of 20-Inch Pipe Line From Texas Gulf to East Coast

Plans for the construction of a second pipe line to supply the East from Texas are expected to be given the approval of the War Production Board within a few days.

Originally planned to run right through to the coast, it is now proposed to break the project into two parts, the same as the "big inch" line and run a 20-inch pipe from the Beaumont-Houston area to Norris City, Illinois, and Seymour, Indiana, making deliveries from those points by rail. It is pointed out that this will permit the use of storage facilities which are being built at the northern terminals for the "big inch," but which will not be needed after the second leg of that project provides a through route to the coast. The new line also will use the same right-of-way as the "big inch" over a large part of its something more than 1800 miles.

Quick approval of the project will permit construction to get under way early in March, and the line is scheduled for completion about September 1.

Its cost of $44,000,000 will be financed through the Reconstruction Finance Corporation. As in the case of the "big inch" line, the government will own the system but the industry will operate it. The line will carry 235,000 barrels of products daily and is scheduled to be used principally for gasoline.

The first leg of the "big inch" now has been completed and the initial batch of oil is moving northward behind a 75-mile test charge of water. Construction of the second section is being pushed with all possible speed, in the face of highly adverse winter conditions.

Simplify Procedure in Priorities for Export

Simplification of the procedure to be followed by oil operators in applying for priority assistance for materials sent to foreign countries is provided for by action of WPB January 20, on the recommendation of PAW, revoking Preference Rating Order P-98-d and amending Priorities Regulation 9.

Under the amendment to the priorities order, operators will use only Form PD-311 or PD-311-C, whichever is applicable, to apply for priority assistance for materials to be used in foreign countries as maintenance, repair and operating supplies and production equipment. Heretofore, in some cases, it was possible for operators to obtain priorities by filing Forms PD-1A and PD-3A.

Ratings will be assigned by WPB generally but, in the case of some products, by the Board of Economic Warfare. However, to apply ratings thus assigned endorsement of a purchase order with a certification that the operator has received an export license, a statement of export clearance, or a statement of authority to export will be sufficient, whether the rating is assigned by WPB or BEW.

Use of Fuel Oil for Non-Heating Purposes in East to Be Reduced

With gasoline and heating-oil rations cut to the bone, PAW and OPA on January 19 moved in on the use of fuel oils for non-heating purposes, with the avowed intention of cutting consumption by all non-essential activities by at least 40 percent throughout the 17 Eastern states.

Under a "priorities" list prepared by the oil agency only a selected group of commercial or industrial consumers will be entitled to receive unrestricted deliveries of fuel oil of all grades from 1 to 6, Bunker C, Diesel, range or gas oil or kerosine. Rations for all other consumers will be cut by 40 percent of the amount allotted to them for the first three months of the year, but not below 9000 gallons.

Classified under Schedule A as essential activities were the usual transportation, public utilities and communications services including pipe lines and pump stations, and producers and refiners of petroleum products and natural and synthetic rubber plants, and industrial plants necessary to the war.

The restriction order also applied to asphalt, with a prohibition against its delivery from any point outside the district to consumers on the Atlantic Seaboard by tanker, barge, tank car, tank truck or tank truck trailer; leaving as the only permitted form of transportation the box-car shipment of hardened asphalt. In this way, it was said, more facilities will be made available for oil.

Refiners in District 1 also are prohibited from producing asphalt during the remainder of the first quarter, the object being to increase the output of fuel oil.

PAW officials said that sufficient quantities of hardened asphalt to meet essential needs can be moved into the area from outside points.

Despite resort to tins for the shipment of kerosine in box cars, shortages of the fuel continued to manifest themselves in New England, Governor Baldwin of Connecticut wiring PAW Januar 21 that famine conditions existed in his state and he was prepared to send a fleet of trucks to New York if supplies could be made available there.

Agitation for construction of the Florida barge canal was revived during the week, under the impetus of a bill appropriating $44,000,000 for completion of the waterway, introduced in the House January 20 by Congressman Hendricks of Florida.

Hendricks pointed out that legislation providing for the construction was enacted last July, yet work has not been started. Construction of the canal, he said, would do much to relieve the oil shortage in the East.

From the Mid-West came reports that near-record winter temperatures were eating into fuel-oil rations, and requests were made for increases which OPA officials said there was little chance of making unless the cold spell was of long duration, since it would require the taking of supplies from the East.

In Washington, irritation over the situation was not dispelled by the disclosure that cars of the federal government in the District of Columbia, not including Army and Navy machines, used 44,868 gallons of gasoline in December, an increase of 15 percent over the same month in 1941. Considerable criticism has been voiced of the apparent disinterest of government officials in gasoline conservation when it comes to their own riding. Government cars are supposed to be used for government business, but they have been seen at race tracks, road houses and other places of amusement.

On January 21, PAW issued a flat ban on the use of tank cars for delivery of gasoline to the East Coast, with a view to making more cars available for the transportation of fuel oil from the Mid-West and Southwest.

It was pointed out that the order does not affect gasoline shipments by pipe line, barge, truck or other means, and tank cars and the production of motor fuel by Eastern refineries as a by-product of aviation gasoline and other war-product manufacture. there will be sufficient gasoline on the Atlantic Seaboard to keep essential motor traffic going, provided, of course, that there is no increase in present rates of gasoline consumption, Deputy Administrator Ralph K. Davies assured.

"The ability to relieve the critical fuel-oil shortage somewhat by turning gasoline tank cars over to fuel-oil service is due in large part to the excellent cooperation of the public in observing the ban on pleasure driving," he said.

"The tank cars used to haul gasoline will now be pressed into service to haul fuel oil, the supply of which is critically low throughout the Atlantic Seaboard. Fuel-oil consumers, however, should be cautioned against over-optimism about the supply that will be available for home owners and other consumers. The additional quantities of fuel oil that will now be shipped eastward will not mean more fuel oil for each individual consumer, but rather fuel oil for many individuals who have had difficulty in obtaining their rationed quotas.

Inquiry Reveals Rubber Being Shipped Abroad

Shipments abroad from slender stock of natural rubber met with criticism from members of Senate agricultural subcommittee investigating the synthetic-rubber program, who called Milo

Perkins, executive director of the Board of Economic Warfare, and Edward R. Stettinus, Jr., Lend-Lease administrator, before them in executive session January 21 to explain why it had been necessary to make such shipments and why 110,000 tons is reported scheduled to be shipped this year.

Earlier in the week, Senator Gillette of, Iowa, chairman of the subcommittee, disclosed that several high government officials, alarmed by reports that it might be necessary to take buses and trucks off the road to save rubber had asked his group to speed and expand the synthetic-rubber program by legislation, if necessary. A spokesman for Rubber Director William M. Jeffers said that while the rubber shortage is "more acute than most people think," he knew of no plans to cut transportation facilities. But he admitted that such a step might be taken if the shortage becomes much worse.

Members of the subcommittee advanced the argument that the government is not only not encouraging production of synthetic as much as it should, but that it is giving away rubber to countries which do not need it as much as we do.

Senator McNary of Oregon said that WPB Chairman Donald M. Nelson sent him data some months ago showing large exports of raw and finished rubber to South America and Canada, and expressed doubt whether any synthetic would be made from farm products "unless some prodding is done in the way of special legislation and appropriations."

WPB figures showed that 117,100 tons were exported in 1942.

Paul E. Hadlick, counsel for the subcommittee, said that 66,000 tons were shipped to Russia and the British Empire last year, under Lend-Lease, and 3500 tons went to South America and 47,600 tons to Canada through the BEW. This year, he said, 70,000 tons is to be shipped to Russia and the British Empire, 3000 tons to South America and 37,000 tons to Canada. Meanwhile, it was disclosed that two weeks ago Jeffers took steps to clarify the respective roles to be played in rubber procurement by BEW and Reconstruction Finance Corporation, with the former hereafter to act only in an advisory capacity. Originally, BEW had the responsibility for directing import programs for rubber and other strategic materials, but the power of direction was transferred to Jeffers when his office was created. Although he did not exercise it until this month.

OPA Gives New Data On Cost Reports Wanted

Misinterpretation of the requirements of the December order of OPA, calling upon all refiners to submit quarterly operational reports from January 1, 1941, to September 30, 1942, has resulted in incorrect data and necessitated the issuance of supplemental instructions.

The matter was called specifically to the attention of refiners who have not yet submitted their reports, so that they might avoid inaccuracies, and those whose returns have been received were requested to submit corrected data.

It was explained by Charles B. Lawrence, Jr., director of the OPA statistical standards office, that in reporting refinery production and revenue, the total volume of production in gallons plus processing loss (shortage) or minus processing gain (overage) must in all cases agree with the total volume in gallons of products consumed, and that "refinery production" should reflect the products produced from crude and other charging stocks on the basis of finished or ultimate yields.

Under refinery production cost, refinery fuel produced from the products processed by the refiner should be included in refinery expense, either as fuel processing or as a part of utilities expense, at the same per-gallon value which is used to determine the value of equivalent production, and that all still gases which have been burned at the refinery during the reporting period should be included at a reasonable value in a refinery expense and also credited to refinery production at an equivalent value, it being pointed out that where refinery fuels produced from the products processed by the refinery are not included in refinery expense the total cost of operation of the plant is understated.

Seek Continuation of House Oil Committee

Continuation of the oil investigations which originally began in 1934 and were resumed at intervals by the oil subcommittee of the House Interstate and Foreign Commerce Committee is sought in a resolution introduced January 18 by Representative Clarence F. Lea of California, chairman of the full committee.

At the close of the last session, the subcommittee wrote a final report summarizing its activities and holding that price increases and stimulation of independent activities were essential if the oil requirements of the war effort were to be met.

Federal Oil Taxes Drop Sharply

War shortages already have cost the government many millions of dollars in taxes, it was disclosed January 22 in figures compiled by the Treasury department.

The oil shortages alone brought 1942 revenues down nearly $40,000,000 from 1941 totals and much more below estimates made by the Treasury before present difficulties arose.

Collections from the federal tax on gasoline dropped to $336,684,645 for the year from $371,135,781 for 1941, while receipts from lubricating oils dropped to $39,932,081 from $43,851,864, department figures revealed.

Only one of the three oil taxes to show an increase was that on pipe line transportation, which provided a revenue of $13,920,707 against $13,292,388 in 1941.

The department's monthly report showed that revenues in December increased over November, the gasoline tax returning $28,453,074 against $20,719,050; lubricating oils $3,527,980 against $2,838,152, and pipe line transportation $1,337,659 against $1,219,101.

Enemy Oil Patents To Be License Free

More than 400 patents and 26 applications for patents dealing with mineral oils have been taken over by the Alien Property Custodian and are being made available to American industry without payment of royalties. Licenses already have been issued for the production of sulphur from "sour" gas, rust and corrosion inhibitors and other products.

These patents were among the more than 50,000 standing in the name of nationals of enemy and enemy-occupied countries when we entered the war, seized under the Trading with the Enemy Act.

Where exclusive licenses are not already outstanding to American industry, APC will issue non-exclusive and non-assignable royalty-free licenses for the life of any enemy-owned patent to any reputable firm or individual, for a fee of $50 for each single patent, plus $5 for each additional related patent to be covered in the same license.

Licenses will be granted on the same terms for patents owned by nationals of enemy-occupied countries, but the royalty-free provision will apply only for the duration of the war and six months thereafter, at the end of which, royalties which are reasonable on the basis of prevailing commercial practice will be charged.

Exclusive licenses held by American industry under patents which have been taken over will be examined but will be allowed to stand if they do not contain restrictive provisions illegally curbing production or use or detrimental to the war effort. Holders of such licenses, however, may relinquish them and accept a non-exclusive royalty-free license. Where the original licenses are retained, the royalties are to be collected by APC.

Contracts Let for More Grain Alcohol Capacity

Expansion of the Publicker Commercial Alcohol Company plant in Pennsylvania, under the synthetic rubber program, was announced January 19 by Secretary of Commerce Jesse Jones.

Jones disclosed that Defense Plant Corporation has entered into a contract with the company for a $2,000,000 expansion of its plant, resulting in an over-all commitment of approximately $4,500,000.

DPC also has executed a contract with the National Distillers Products Corporation for the construction and equipment of a plant in Missouri at a cost of approximately $2,000,000 for the production of alcohol from grain.

In both instances, the companies will operate the plants, title to which will be held by Defense Plant Corporation.

Tank Car Deliveries Drop Slightly

Tank car deliveries into District 1 during the week ended January 16 averaged 818,331 barrels daily, a decrease of 4506 barrels from the preceding week. Reports on the shipment of kerosene by box car showed deliveries of 85 cars totaling 11,703 barrels, a daily average of 1672 barrels.

Salvage Campaign for Oil Well Pump Balls and Seats Started

A campaign has been initiated among manufacturers and supply houses to collect and salvage used sub-surface pump parts containing scarce alloys, such as stainless steel, tool steel and non-ferrous metals. The principal items involved are stainless seats and balls for sub-surface pumps. The campaign, initiated by H. B. Kent, chief of the salvage section of PAW, officially began January 1, 1943, and is considered essential to insuring the petroleum industry an ample supply of new or reconditioned subsurface pump parts.

All manufacturers of sub-surface oil-well pumps on the Pacific Coast have organized so they may cooperate fully in the campaign. This group has made the following announcement regarding the campaign:

"The Western manufacturers have agreed to act as central collection agents and are doing everything possible to inform producers, distributors and supply stores of the drive. In contacting those who have used parts or who will help in the collection, the manufacturers are stressing the urgent need for turning in seats and balls so that scarce alloys will be available for making essential replacement parts. It is being pointed out that the nearer the petroleum industry comes to recovering 100 percent of its needs as a result of the drive, the more inclined the War Pnoduction Board will be to grant 100 percent of the industry's requirements.

Credit Plan

"Producers are being asked to turn in all worn parts on hand immediately instead of holding them. To discourage retaining excessive quantities of old parts until a comparable number of new parts are ordered, a 'credit' plan has been established similar to the now famous toothpaste-tube plan. No monetary credit will be involved but 'unit credit' will be given for salvaged parts contributed. Under this plan notations will be made of the balls, seats and other parts turned in by each producer. In effect, this system will allow a producer to secure one new part when needed for every used part for which he has received credit by previous salvage.

"Kent related the absolute necessity for such a drive to the various manufacturers on November 11, 1942, and asked for their suggestions. He pointed out that participation in a program of this type was the petroleum industry's patriotic duty. After considering their replies, the following points were proposed as a basis for organizing and conducting the campaign:

Functions of the Manufacturer

"1. To act as a central collection point for all alloyed parts gathered in the drive.

"2. To maintain a record of the volume of scrap alloy material recovered in the drive, as a means of augmenting the supply of metals utilized in the manufacture of new parts; and to keep PAW advised periodically of these quantities.

"3. To segregate the parts by alloy content, advising PAW periodically of the quantities on hand so that appropriate steps can be taken by the War Production Board to faciiltate the movement of the materials to the proper remelting points.

"4. To absorb any costs involved in the collection, segregation, and disposition of materials not otherwise recovered in the transaction.

Functions of the Jobber or Distributor

"1. To set up a method of extending 'unit credit' to the supply stores for the number of balls, seats, etc., turned in, to apply against future purchases of new balls and seats.

"2. To prepare a letter to outlets advising them of the drive, outlining the procedure for conducting the drive, and soliciting their wholehearted cooperation in this program.

"3. To arrange for the shipment of scrap parts from the primary collection points (the supply stores) to the central collection points (the manufacturers).

"4. To absorb any costs incurred in the collection drive.

Functions of the Supply Store

"1. To act as a primary collection point for worn pump parts containing scarce alloys.

"2. To set up a method of extending 'unit credit' to customers for the number of worn balls, seats, etc., turned in.

"3. To work with jobber or manufacturer in arranging for frequent consignment of worn parts on hand.

"4. To encourage by word of mouth and otherwise, the full active cooperation of all producers in this collection drive."

Houston IPAA Gathering Hears Plea for Price Raise

The oil industry needs a raise in crude oil prices, continuation of the depletion allowance, and a proper tax base to bring about the discovery of new oil reserves, Russell B. Brown of Washington, general counsel for the Independent Petroleum Association of America, told the Southeast Texas District of the association at Houston, January 19.

Brown said he had been assured by Ralph K. Davies, deputy petroleum coordinator, that PAW would ask PIWC to study the crude-price situation and make recommendations. OPA has not shown any willingness to take any action on boosting prices although data has been submitted showing the necessity for an increase, Brown said, emphasizing his belief that members of Congress were in the frame of mind to permit a raise in prices.

Declaring that more steel for drilling equipment will not come without difficulty, Brown stated he is convinced that various governmental agencies will provide more steel for producers "since there is more consciousness in Washington of the growing importance of oil to the war program."

In order to make an appreciable showing in finding new reserves, the industry must drill from two to two and one half times as many wildcat tests in 1943 as in 1941 or 1942. This program will have to be carried out with less technical manpower, fewer tools and less equipment, he said. Brown believes these wells must be drilled to supply the increased demand for petroleum and petroleum products in latter part of 1943. Some government departments have predicted that from 400,000 to 500,000 barrels of additional oil will be needed daily late in the year.

Frank Buttram, association president, pointed to a decline in production in District 2 (Oklahoma, Kansas, Illinois) as chief reason for higher crude prices and resultant increased wildcatting. He said that unless several new reserves are found the fields in the district will not be able to supply allocations. He declared the only states not having difficulty producing their allowables are Texas, Louisiana, and New Mexico.

Ickes Blames Illinois Lack Of Regulation for Shortage

Inadequate crude oil production in the Middle West is due partly to the failure of Illinois to adopt a conservation program, the Wisconsin Petroleum Association was told at Milwaukee January 21 by Petroleum Administrator Harold L. Ickes.

Lashing out at state authorities of both political parties, Ickes decried the "sinfully wasteful production practices that have prevailed in Illinois, whose fields have been gutted bevond all hope of repair by those who, in contemptuous defiance of the national interest, fought the adoption of wise conservation laws."

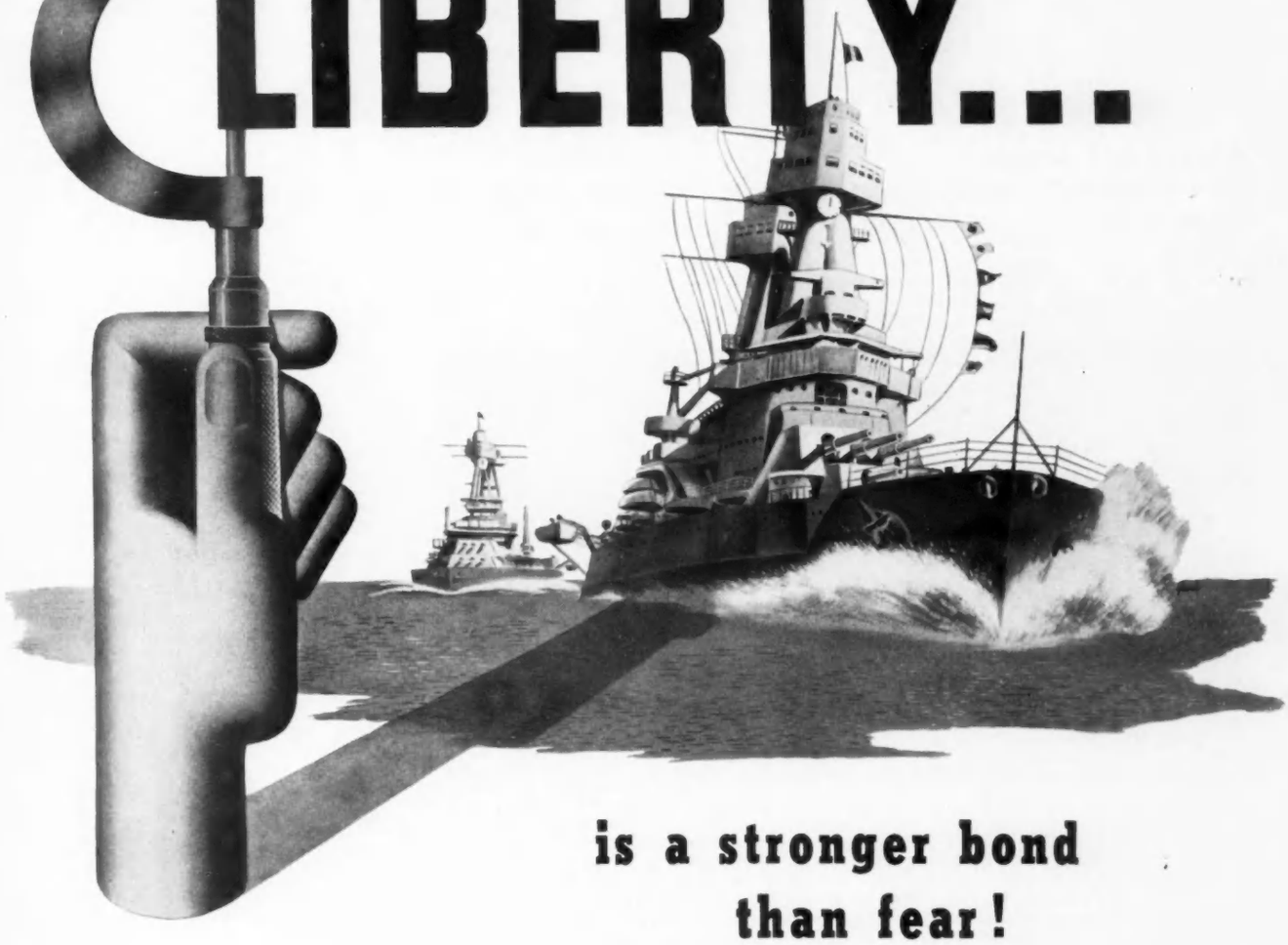
"The rape of the Illinois oil fields is a monumental tragedy, the like of which I hope that we shall never see again," he declared.

"Despite the pleas of Washington officials, from the President down, my home state brazenly persisted in wasteful practices that are costing our country dearly. A legislative clique under the leadership of a Democratic lieutenant-governor, who admittedly was speculating in oil lands and leases, persisted in keeping the throttles wide open while rich petroleum resources flowed unchecked into the ditch. But during two years of Republican rule at Springfield nothing has been done to lock the stable door even after most of the horses have escaped. Promises have been made, but they have not yet been redeemed. I hope that the critical situation in which their country finds itself with respect to petroleum supplies will persuade the politicians of both parties in Illinois to undertake belated efforts to put a stop to the riotous practices that have prevailed in the past. No only will his mean more oil to use against Hitler, it will mean greater wealth for Illinois and its citizens because there will be a demand for every barrel of oil that can be produced. Oil wasted is of benefit to no one."

The administrator assured the Mid-West operators that they need have no fear of consolidation of industry facilities and equipment, of which, he said, there lately has been much talk as a means of eliminating unnecessary and wasteful operations and effecting operating economies.

"You are concerned, and naturally so, lest, in any attempt at consolidation, the larger interests will be adequately taken

LIBERTY...



is a stronger bond than fear!

Why do the men in the armed forces of the United Nations fight with such fervor and ferocity? Why did these nations hold together and work together in spite of early defeats due to unpreparedness?

The answer is that Liberty is a stronger bond than fear. Its authority springs from the free consent of the governed, while the authority of the Axis ideology is the will of gangmen who use their usurped power to enslave the masses.

Free men have always been better fighters; they are better fighters in this war. They go into battle with an undefeatable determination to save the one possession human beings desire above all others—liberty. The initiative and resourcefulness that liberty engenders in free men is manifested in the invention, quick adaptability to new requirements, and astounding production of free enterprise here in America.

The progress of the American Oil Industry to the point of producing over sixty per cent of the oil of the world is attributable to the competitive spirit of this most individualistic of industries. We of Mission are planning still greater improvements in Mission products for post-war use by this swift advancing oil industry. Now war comes first.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

MANUFACTURERS OF:

Mission Slush Pump Valves—Mission Slush Pump Pistons—Mission Piston Rods—Mission Gland Packings—Mission Rotary Slips—Mission Swabs—Mission Plug Valves.

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care of and you will be the ones to suffer the most," he said. "So that you may be reassured on this score, I state unqualifiedly that we propose to move in the direction of consolidations only in the event of absolute necessity and then only after having given full consideration to the equities involved.

Alberta Encouraging Oil Search Activity

Concessions to holders of crown reservations are announced by the Alberta government for the purpose of encouraging increased activity in the search for new oil sources. The changes are embodied in order-in-council 1901/42, given approval December 21.

The preamble to the new order states that "due to wartime conditions it is becoming extremely difficult for those seeking oil and gas to secure adequate funds for the carrying on of investigations for the discovery of oil and gas in wildcat territory in Alberta, and as the establishment of immediate reserves of oil and gas is an urgent necessity for war and allied purposes, it is proper and convenient in view of the urgency of the situation, that the province assist in the discovery of oil and gas."

Miscellaneous Oil Bills Before Texas Legislature

Bills affecting the oil industry were introduced in the House as the Texas legislature got under way last week. Roger Knight of Normangee introduced a bill that would permit the proration of distillate in Texas.

Representative Markle of Galveston introduced a bill providing a fine of $200 for the pollution of coastal waters. Representative Kinard has a bill to suspend school land leases for an indefinite period if it is impossible to obtain access to the land. Representative Roark has a bill providing for the use of gas for manufacture of carbon black in any plant capable of producing five pounds of black or more per thousand feet of gas processed.

Texas Court Ponders "What Is 'Normal' Operation?"

Trial of the water-oil ratio suit in district court at Austin continued last week with detailed testimony by engineers appearing for the Texas Railroad Commission. Issue in the case is whether the commission has the authority to curtail production of marginal wells, as defined by the statute, to prevent physical waste.

Konowa Oil Company and others brought the suit, and the trial began January 11, the day after the order became effective. Testimony by plaintiffs consisted of statements from the operators of properties affected by the order.

Because the marginal-well law is involved, the suit is of unusual importance. The statute provides that a well is "marginal" if it can produce no more than a certain amount over 30 consecutive days under "normal" operating conditions. Just what these "normal" conditions are is not defined.

Gillis Johnson, Fort Worth attorney trying the case for the commission, drew from witnesses testimony which he said indicated that wells were operated in such a variety of ways that there was no "normal" or standard operating practice. It may be that the court will find the statute too vague to be constitutional.

Because of legal strategy, it appeared certain that the commission could keep the order in effect for two or three years regardless of the decision. Since the case went to trial on its merits, the court must issue a permanent injunction if it finds for the plaintiffs. This can be superseded by the state if it files an appeal, and the order may remain in effect until the Supreme Court hands down a final decision. Two or three years may pass before that event occurs. Meanwhile the wells in the lawsuit would be subject to the order, and would pass out of the picture before the case is decided finally.

John H. Tucker Dies; With Gulf Since 1904

John H. Tucker, general superintendent of production for Gulf Oil Corporation, died January 21 at Houston. He had been with the company since 1904 and had lived in Houston 27 years.

Tucker was born in 1884 in Butler County, Pennsylvania, where his father was in the oil business. He worked with his father on leases during school vacations and in 1901 he accepted regular employment at Parkersburg, West Virginia. He worked as a roustabout, cableman and tool dresser in the old fields of West Virginia and Pennsylvania.

Tucker came to Texas in 1904 and joined J. M. Guffey Petroleum Company, later Gulf Production Company, as a cableman and tool dresser. He served as field foreman until 1906 and in 1908 he was transferred to the Beaumont district office as assistant superintendent of production.

He was promoted to superintendent of production in 1913, a position he held at the time of his death. While with Gulf he was active in developments at Batson, Goose Creek, Powell and East Texas and at Vinton in South Louisiana. He was awarded a 35-year service pin in 1940.

JOHN H. TUCKER

Illinois State Report Shows 11,556 Wells Producing

Illinois oil production during 1942 was estimated by the state geological survey division at 106,281,000 barrels, a drop of about 28,000,000 barrels from the 1941 yield of 134,138,000 barrels. Production in December totaled 7,630,000 barrels, a rise of 9000 barrels over November.

During December 181 wells were completed, bringing to 2048 the number of wells completed last year. Of the total number drilled, 1079 were successful pool development wells, 48 extended the boundaries of production in various pools, 40 were wildcats opening new pools, 13 were gas producers, 15 were put down in order to return gas to producing sands, and 16 for the disposal of salt water. Remainder were dry holes.

The year's end saw 11,556 wells producing in the 154 Illinois fields that are active. At the beginning of January, there were 263 drilling operations in progress in the state.

Alberta Reached Top Production in 1942

For the seventh consecutive year, the Alberta oil industry rolled up another production record in 1942. Oil production, for the first time in the 30-year history of the industry, rolled past the 10-million-barrel mark for a single year, with preliminary 1942 estimate 10,150,000 barrels. Nineteen forty-one output was 9,908,000 barrels.

Yet, at year's end, Canada's West was face to face with the most critical oil shortage in its history, because of rapidly mounting military demands, and a gradual slump in Alberta oil production resulting from a slump in drilling in proven and prospective oil areas.

Production reached a peak in February and March 1942 of 30,000 to 31,000 barrels per day, but by year's end had dropped to about 27,600 barrels per day.

The Alberta oil industry was called upon in 1942 to meet unprecedented demands for its products, demands created largely by the war.

Ranking large in the war plans of the Allies in 1942 was construction of a 1200-mile highway linking Alaska with the highway system of the United States and Canada. An engineering project comparable to the Panama Canal, the preliminary Alcan Highway was rushed to completion during the spring, summer and fall of 1942.

At year's end, thousands of trucks were pouring materials of war along its route. The oil fields of Alberta provided the hundreds of thousands of barrels of petroleum products required for the highway construction. These fields now have the job of supplying many thousands of barrels of oil per day for further construction work, and to keep the trucks rolling to and from Alaska.

The British Commonwealth Air Training Plan continued to expand during 1942, and by year's end its planes were consuming two million gallons of aviation gasoline per day, a large part of it over the plains of Western Canada. Much of the 87-octane fuel is being provided from Alberta oil. At year's end, Western refineries were ready to commence production of fighting grade 100-octane fuel from the high-grade oil of Turner Valley.

Get the top price for your Monel and rolled Nickel scrap

Segregate and avoid contamination

THE U. S. war industry is today in urgent need of Monel and rolled Nickel scrap.

Every pound you turn in is of real and immediate aid. And every such pound of scrap that is not contaminated with other metals, that is free of oil and dirt and properly segregated will return a higher price per pound to you.

When sent with proper authority direct to the Huntington Works of The International Nickel Company, Monel and rolled Nickel scrap is remelted into the form of pig. This is used, by the steel industry, in the making of important alloy steels.

Remember your effort in this scrap drive is not only a fine contribution to victory, it can pay you a substantial cash dividend.

The table and notes at right will help you in the sorting and identification of scrap metals.

QUALITATIVE TESTS FOR IDENTIFYING SOME COMMON WHITE METALS AND ALLOYS

MAGNETIC TEST	NITRIC ACID TEST				
Reaction to Magnet	Reaction to Conc. Acid	Reaction to Acid after Dilution	Color of the Solution	Iron Nail Test for Copper	Material Probably is
Magnetic	Reacts Slowly	Reacts Slowly	Pale Green	No Copper Plates out	Rolled Nickel
Magnetic* (slightly)	Reacts	Reacts Slowly	Greenish Blue	Copper Plates out	Monel
Non-magnetic	Reacts	Reacts	Bluish Green	Copper Plates out	Copper-Nickel Alloy containing less than 60% Nickel, e.g. Nickel-Silver
Magnetic	Reacts Slowly	Reacts	Brown to Black	Not required	Steel or Cast Iron
Non-magnetic	Reacts Slowly	Reacts	Brown to Black	Not required	Ni-Resist
Magnetic	No Reaction	No Reaction	Colorless	Not required	Straight Chromium Stainless Steel
Non-magnetic†	No Reaction	No Reaction	Colorless	Not required	Chromium-Nickel Stainless Steels e.g. "18-8"

*Monel is usually but not always slightly magnetic at atmospheric temperature. Monel that appears to be non-magnetic at atmospheric temperature may become magnetic when cooled by dipping in ice water or in a freezing mixture—other copper-nickel alloys of lower nickel content do not become magnetic. Monel that is magnetic at atmospheric temperature loses its magnetism when heated by dipping in boiling water. This test serves to identify Monel when only a magnet is available—no other common material loses its magnetism in this temperature range.

†"K" Monel is always non-magnetic even when cooled; therefore chemical analysis is required to distinguish "K" Monel from the copper-nickel alloys of lower nickel content.

NOTES ON CARRYING OUT TESTS

1. Magnetic Tests

Bring the magnet in contact with the specimen to be tested. (Be sure that there is no magnetic material such as iron or steel beneath or in the immediate vicinity of the specimen.) The magnet will or will not be attracted to the specimen.

In cases of doubt, and especially where the material appears to be non-magnetic, use a more sensitive testing method:

(a) Balance the magnet or the specimen on the edge of a bench or desk. Then bring the specimen close to the magnet, or vice versa. If the material is magnetic the balance will be upset and a movement of either the magnet or the specimen will be observed.

(b) Another method is to suspend the magnet on a string and bring it close to the specimen. A slight movement of the magnet will be observed if the specimen is even slightly magnetic.

2. Nitric Acid Tests

Clean test surface so that the acid will come into direct contact with the material.

Apply one or two drops of concentrated nitric acid to the clean metal surface.

Let acid remain in contact with the metal for a minute or two.

Observe any reaction that takes place.

Dilute acid by adding three or four drops of water, one drop at a time.

Observe reaction: If solution turns green or blue do not disturb until nail test has been completed.

3. Copper Test with Iron Nail

If nitric acid test forms green or blue colored solution, make test for copper:

Rub a clean iron nail in the colored acid solution on metal surface, keeping nail in contact with the specimen.

If the alloy contains copper, there will be a deposition of copper either on the nail or on the surface of the metal under the acid solution.

Add a drop or two of additional water as the nail is rubbed around to prevent the deposited copper from re-dissolving in the acid.

IMPORTANT!

No Monel and rolled Nickel scrap should be sent to Huntington without authorization.

Authorization must be obtained from the Scrap Salvage Section, Monel and Rolled Nickel Sales Department, The International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

Letters requesting authorization should state:

1. Kind of metal (Monel or Rolled Nickel)

2. The amount

3. Type of scrap—turnings, forgings, castings, strip, sheet, etc.

THE INTERNATIONAL NICKEL COMPANY, INC.

67 Wall Street **New York, N. Y.**

Humble to Operate United's Converted Line from Corpus Christi to Houston

Defense Plant Corporation has purchased United Gas Company's 150-mile gas line from Refugio, Southwest Texas, to Pierce Junction (Houston), and named Humble Oil & Refining Company its agent to convert the line to oil transportation and extend it 15 miles from Pierce Junction to Houston.

DPC has indicated it wants crude and heating oils moved from the Corpus Christi area to Houston in the converted line which is composed of 58 miles of 14-inch and 92 miles of 16-inch. The conversion and extension is due to be completed within 90 days.

Sinclair Looping Short Section North of Houston

Sinclair Refining Company has solicited bids for construction of a 26-mile 10- or 12-inch loop to extend north from its Sinco terminal (Houston), to Huffsmith Station, parallel to a 12-inch unit that delivers East Texas field crude to the company's Houston refinery. The proposed loop will tie into an 8-inch unit with 8-inch loops, that extends north via Mexia to Oklahoma, thus enabling the company to alter its system so as to pump oil north from Houston and continue its stream of East Texas oil south.

Sinclair Refining Company is scheduled to handle Shell Pipe Line Corporation's allotted East Texas field crude deliveries to Shell Oil Company's refinery at Houston for the duration as result of Shell's 10-inch trunk line being converted into a No. 2 heating-oil feeder for War Emergency Pipe Line, Inc.'s 24-inch carrier. Sinclair has awarded contract to O. C. Whitaker Company to lay a 6-mile 8-inch crude line from its Houston tank farm to Shell Oil Company's refinery.

Initial deliveries of high-gravity crude from the Corpus Christi district to its Houston terminal was made by Sinclair Refining Company late last week. The company completed a 150-mile 8-inch earlier in the month from Corpus Christi to Damon Mound, where connection was made with an old 8-inch unit that has been making deliveries to the Houston plant. This line is to handle 20,000 barrels of crude oil daily.

Stanolind Loops to Increase Texas Oil Movement North

A looping program, authorized by Stanolind Pipe Line Company between Mexia and Healdton on its Gulf Coast-Great Lake trunk line system, will step up its facilities for handling sweet oil from Texas to 50,000 barrels daily, exclusive of the separate unit that services the KMA field. The added capacity is to accommodate common-carrier load destined for the East Coast under the provisions of Project 1. Stanolind has awarded contracts to I. C. Little and Jones & Brooks for the laying of three loops aggregating 75 miles of second-hand 8-inch pipe between Mexia and Graford Station. The loops will parallel the 10-inch portion of the combination 10-inch and dual 8-inch system. Stanolind has completed installation of a 24½-mile 12-inch loop, parallel to two 8-inch units, extending north from Graford to Trinity River and a 37-mile 12-inch loop from Bowie to Nocona Junction, this enabling the removal of an equal mileage of 8-inch from its sweet-oil circuit. A 24½-mile 8-inch loop is to be installed from Trinity River to Bowie, and lay a 21-mile 8-inch, parallel to three 8-inch units, from Nocona Junction across Red River to Healdton.

Stanolind Pipe Line Company began handling 5000 barrels of West Central Texas sweet crude daily early last week from Ranger to Healdton for the account of Humble Oil & Refining Company on consignment to Oklahoma Pipe Line Company and connecting carriers to the East Coast. This Mid-Continent grade oil is to be batched by Stanolind through its Ranger-Mid-Continent 8-inch sour-oil unit, which also handles 8000 barrels daily of West Texas oil gathered by Stanolind in Winkler and Ward counties for common-carrier movement through Humble's facilities to Ranger.

Humble Pipe Line Company has been routing its West Central Texas crude runs, varying from 12,000 to 5000 barrels daily since last June, through the East Texas field to Louisiana, but lately the shipment has been halted in the East Texas field for tank-car loading on consignment to the East Coast.

Laying 28 Miles of Field Line in Western Kansas

Skelly Oil Company is laying 28 miles of field lateral in western Kansas from Kipp and Jordan fields to Iuka production and from there on to the Cunningham area where connections are already made to the main lateral from western Kansas. The first section of the line, from Kipp and Jordan to Iuka, will be 14 miles of 4-inch, while the last section will be 14 miles of 6-inch. Capacity of the lateral will be about 6000 barrels daily.

Barnsdall Still Owns Placedo Gathering System

Magnolia Pipe Line Company has not acquired Barnsdall Pipe Line Company's gathering system in the Placedo field, Victoria County, Texas, as stated in THE OIL WEEKLY of January 18, 1943. According to E. B. Reeser, Barnsdall's president, the latter is merely delivering some of the oil it gathers to Magnolia.

Revised Texas New-Field Rules Made Retroactive

The Texas Railroad Commission has revised its order fixing special allowables for new fields, as announced at the hearing at Dallas January 15. The order has two purposes: to permit wells to receive the "new field allowable" 18 months after the oil is first marketed, and to encourage extension and full definition of new fields by assigning the premium allowable to the sixth well and others drilled thereafter if they are more than one half mile from the nearest producer in the field.

"It is further ordered that this amended order shall apply to all wells in each new field discovered after the effective date hereof as follows. Each well drilled in such new field shall receive the new-field allowable for a period of 18 months after the first oil is marketed from each such well or until there shall have been completed in said field 5 producing wells and the oil therefrom marketed. Provided further that the above specified allowables shall also apply to the sixth or succeeding well drilled in such new field, provided the location of said sixth or succeeding well drilled shall not be nearer than one half mile to any other producing well or wells.

"It is the intention of this order to continue the special allowable granted to the discovery well and four offsets thereto, but in addition to said first five wells, it is the intention of this order to allow half-mile extensions to share in new field allowable so that other operators in the area may drill their lands without necessarily ending the new-field allowable and depriving the discoverer of his bonus for making the discovery.

"All wells to which this order applied shall be exempt from any and all shut-down orders during such 18 months new field allowable period.

"It is further amended that this amendment shall apply to any well or wells already drilled and determined to be the discovery of a new field and from which said well or wells no oil has been marketed, as well as to all wells or wells drilled in the new field after the effective date hereof."

Phillips High Bid Gets Dunning Estate Properties

Cash bid of $1,265,000 submitted by Phillips Petroleum Company for properties of the W. H. Dunning, Jr., estate was confirmed January 21 by probate court at Fort Worth. The deal involves one half interest in a 25-acre lease with 8 wells in the East Texas field; 25 wells in the Goldsmith field; one half interest in 4 wells in the latter field; nominal production in Keystone field; and wildcat blocks in West Texas. The court set aside a bid of $960,000 made December 28 by Buffalo Oil Company and considered bids on two other occasions when Stanolind Oil & Gas Company and Southland Royalty Company completed by topping each others' bid. A wildcat block near Seagraves, Gaines County; a small block on a geophysical high in Crockett County, and undeveloped acreage near a pending deep test in North Goldsmith field induced bidding.

Indian Lease Sale

Oil and gas mining leases have been offered on 54 tracts of restricted Indian lands with bids to be opened January 26 at Muskogee by Superintendent A. M. Landman. Six tracts are being offered in Creek County involving a total of 480 acres, 5 Okfuskee County tracts total 280 acres, 7 in Seminole County total 706 acres, and three in Garvin County total 350 acres. In McClain County a total of 762 acres are offered in 22 tracts. In Stephens County, 5 tracts total 451 acres and in Carter County, there are 260 acres offered in 4 tracts. In Love and Hughes counties a single tract in each is offered involving 60 and 20 acres, respectively.

Not Enough Fuel Nor Too Much Gasoline; Crude Production, Refinery Runs Down

After having declined 60,000 barrels in the previous week, daily average crude runs to stills decreased 34,000 barrels more in the week ended January 16, with the result that it was necessary to continue drawing heavily on stocks of light and heavy fuel oil, which are seriously low. There was some accumulation of gasoline in storage, but not in a normal volume for this season, and the stocks of that product now are 14 percent under a year ago. Gasoline consumption is down in a comparable ratio, but it now appears that eventually there may develop a scarcity of gasoline as well as the fuel oils. Meanwhile, it has continued necessary to draw on crude in storage to keep refineries running at the recent none-too-high levels. Crude stocks now are within about 3,000,000 barrels of the 20-year low that followed shutting down of fields in the Mid-Continent in the latter part of 1939.

United States stocks of gas oil and distillate fuel were reduced 1,526,000 barrels in the week of January 16—about the same amount as in the preceding week. On January 16 they aggregated 39,841,000 barrels, having been 4,693,000 barrels or 10.5 percent less than a year previously, although potential demand is greater now than then, because more oil burners have been installed. All districts except the Appalachian area showed withdrawals from storage in the week of January 16. Only to a limited extent was the draft on stocks due to curtailed production of light fuel, as declines in production in some districts were largely compensated by increases in other districts.

Continued heavy withdrawals of residual fuel oil from storage constitute a matter of serious nature. Stocks of that war-essential product were further reduced 761,000 barrels within the week ended January 16, having come down to 71,798,000 barrels. At that level they were nearly 20,000,000 barrels (21 percent) lower than a year before, although demand is running higher, with war production industries, the railroads, and ships requiring large volumes. The large draft on stocks in the week of January 16 was accounted for largely, and in about equal proportions, by the East and West coasts, although there were minor withdrawals also in all other districts except the Middle West. Those drafts on storage occurred in the face of increased production of residual fuel oil in all districts. While the East Coast-Southwest districts increased output in the amount of 107,000 barrels over the preceding week, there was a withdrawal of 392,000 barrels, and similarly, California boosted production 185,000 barrels yet took out of storage 355,000 barrels. Those increases in production of the heavy fuel were made while crude runs to stills were slightly lower, indicating that the larger output was achieved by taking larger yields of the heavy fuels at the plants, as has been urged by the government. Apparently, the prob'em is becoming more a matter of running enough crude than one of adjusting yields. On all sides, the evidence grows that the nation faces an increasingly serious threat of a scarcity of crude oil.

United States stocks of finished and unfinished gasoline were increased in the week ended January 16 from 84,245,000 to 84,955,000 barrels—a 710,000-barrel addition. The new total was, however, 13,556,000 barrels (13.7 percent) under that of 98,511,000 barrels on hand January 17 last year. Demand for gasoline for domestic use, under rationing, probably is down around 15 percent or more. However, stocks are not ideally distributed over the country, and they do not look too large, in view of the heavy and increasing military demands.

Although all other districts added to gasoline storage, California withdrew

Crude Oil Production in the United States

(Estimates compiled by The Oil Weekly. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	*State Allowable of Crude Production	PRODUCTION IN WEEK ENDED Jan. 16	Jan. 23
Arkansas	74,826	75,150	75,100
California	771,000	773,500	776,000
Long Beach		34,150	35,000
Midway-Sunset		56,950	57,000
Kettleman Hills		43,300	44,000
Wilmington		94,950	95,000
Rest of State		544,150	545,000
Colorado		6,400	6,300
Illinois		233,100	239,050
Salem		30,600	31,150
Louden		40,350	43,700
Other New Pools		152,100	152,300
Old Pools		12,050	11,900
Indiana		17,600	14,650
Kansas	304,600	300,650	307,500
Kentucky		11,200	11,400
Louisiana	320,500	339,750	340,350
North		92,700	92,800
South		247,050	247,550
Michigan	58,430	56,800	62,300
Mississippi		58,650	57,350
Missouri		95	100
Montana		20,650	19,350
Nebraska		2,700	2,650
New Mexico	99,300	93,500	98,450
New York		15,600	14,800
Ohio		9,900	10,150
Oklahoma	370,600	347,400	346,650
Oklahoma City		58,800	59,250
Seminole Area		79,150	78,550
Rest of State		209,450	208,850
Pennsylvania		49,450	44,900
Tennessee		35	30
Texas	1,307,553	1,330,050	1,332,650
Upper Gulf Coast		308,850	309,050
East Texas Field		328,100	327,450
Rest of Eastern Texas		100,900	101,800
Lower Gulf Coast		100,200	100,800
Southwest Texas		48,900	49,350
South Central Texas		17,800	17,450
West Texas		200,300	201,450
North Texas		136,450	137,050
Panhandle		88,550	88,250
Utah		10	15
West Virginia		6,850	9,350
Wyoming		87,650	93,200
Total 8 Prorated States	3,306,809	3,316,800	3,339,000
Total United States		3,838,690	3,862,295

*Details on state allowables in The Oil Weekly of January 18, page 46.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

ITEM	Crude Oil Prod. Bbls. Day (Add 000)	Week Ended	Runs to Stills Bbls. Day (Add 000)	Week Ended	Crude Stocks Bbls. (Add 000)	Week Ended	Gasoline Stocks Bbls. (Add 000)	Week Ended	Gas Oil & Distillate Stocks Bbls. (Add 000)	Week Ended	Residual Fuel Oil Stocks Bbls. (Add 000)	Week Ended
Highs:												
1939	3,910	8- 5	3,650	10-21	278,607	5-26	87,769	4-22	39,562	10-28	116,237	8-26
1940	3,890	3-16	3,690	6-22	265,865	8-31	102,817	4-20	49,051	10-19	109,135	9-14
1941	4,337	11-22	[4]4,120	10-18	266,187	3-29	99,727	3-29	[5]54,983	11-15	102,448	1- 4
1942	[4]4,337	2- 7	3,961	1- 3	263,208	3-28	[1]107,229	3-14	49,861	11-14	95,857	1- 3
1943	3,871	1- 2	3,734	1- 2	233,938	1- 2	84,955	1-16	42,913	1- 2	72,881	1- 2
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	20,722	4-15	105,397	4- 8
1940	3,335	11-30	3,370	1- 6	237,339	1-27	79,847	11- 9	23,551	4- 6	102,344	2-10
1941	3,364	1-11	3,490	1-18	249,399	11-15	79,923	10- 4	28,381	4-12	90,914	7-12
1942	3,297	7- 4	3,393	5-23	231,896	12-12	75,934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,640	1-16	232,191	1- 9	82,420	1- 2	39,841	1-16	71,798	1-16
Trends in 1942 (Week Ended):												
Jan. 3	4,038	.....	3,961	.....	244,440	.....	92,987	.....	49,357	.....	95,857	.....
Jan. 31	3,871	.....	3,848	.....	250,740	.....	97,810	.....	40,674	.....	91,189	.....
Feb. 28	4,016	.....	3,675	.....	259,373	.....	105,635	.....	34,547	.....	88,285	.....
Mar. 28	3,820	.....	3,667	.....	263,208	.....	105,624	.....	31,756	.....	83,045	.....
April 25	3,581	.....	3,506	.....	257,073	.....	102,897	.....	29,240	.....	81,107	.....
May 30	3,877	.....	3,522	.....	255,023	.....	95,355	.....	31,384	.....	79,628	.....
June 27	3,719	.....	3,581	.....	253,364	.....	88,396	.....	32,851	.....	77,304	.....
July 25	3,691	.....	3,658	.....	249,262	.....	82,281	.....	35,966	.....	77,816	.....
August 29	3,964	.....	3,697	.....	249,007	.....	80,831	.....	42,060	.....	78,034	.....
September 26	3,909	.....	3,802	.....	242,785	.....	80,550	.....	45,945	.....	78,943	.....
October 31	3,901	.....	3,731	.....	239,266	.....	79,159	.....	48,131	.....	79,166	.....
November 28	3,878	.....	3,736	.....	234,850	.....	78,854	.....	49,739	.....	77,796	.....
January 2	3,871	.....	3,734	.....	233,938	.....	82,420	.....	42,913	.....	72,881	.....
January 9	3,821	.....	3,674	.....	232,191	.....	84,245	.....	41,367	.....	72,559	.....
January 16, 1943	**3,850**	.....	**3,640**	.....	.....	.....	**84,955**	.....	**39,841**	.....	**71,798**	.....
January 17, 1942	4,046	.....	3,722	.....	[4]244,364	.....	98,511	.....	44,534	.....	91,441	.....
Change:												
In week	+29	.....	—34	.....	—1,747	.....	+710	.....	—1,526	.....	—761	.....
In year	—196	.....	—82	.....	—12,173	.....	—13,556	.....	—4,693	.....	—19,643	.....
In year	—4.8%	.....	—1.2%	.....	—4.9%	.....	—13.7%	.....	—10.5%	.....	—21.4%	.....

[1] All time peak. [2] Lowest since April, 1922. [3] Lowest since October 1922, due to shutdown of six Mid-Continent States. [4] Stocks, January 10, 1942.

175,000 barrels, in reflection of the comparatively large yields of fuel oils and somewhat lower crude runs to stills. The California developments suggested that while scarcity of fuel oils may be alleviated to some extent by increasing refinery yields at the expense of gasoline production, there are limits to what can be achieved in that way, because eventually, shortage of gasoilne also would develop.

In charging to stills 3,640,000 barrels of crude daily in the week of January 16, the refineries of the United States were operating at 75.7 percent of their rated capacity of 4,806,000 per day. The runs were off 34,000 barrels from the previous week, and 82,000 barrels (1.2 percent) from the corresponding week a year ago. The changes by districts were only nominal except the decrease of 34,000 barrels in California's daily runs.

Production Up

Domestic production of crude oil averaged 3,850,000 barrels per day in the week of January 16, up 29 000 from the week before, and down 196,000 barrels (4.8 percent) from the corresponding week a year ago. The production is not quite adequate for maintaining refinery runs at current levels, and it has been necessary to meet the deficiency by steady withdrawals of crude from storage. Within the past 10 months, stocks of crude have been reduced 30,000,000 barrels, an average of 3,000,000 barrels per month. That average has continued in the more recent months as well as previously.

Markets Strong Except for Lubes, Low Octane Gasoline

Shortages of materials and inadequate transportation have continued to rule the markets, and all products generally are in greater demand than supply, although the Gulf Coast remains an exception, with refiners reporting full or nearly full storage and inadequate transportation outlet.

In the East Coast district, the deficiency of petroleum products of all kinds has been accentuated by the increased military demands and full-blast war production. Heating oils continue seriously inadequate, and only through sharp curtailment of industrial use of heavy-fuel oil generally can the shortage of that product prevent serious interference with operations of some war-production plants.

In the Middle West there are continued shipments to the East to alleviate the serious shortages in the latter area, and the movement is largely using available tank cars, with the result that heavy burdens are placed upon truck transporattion in the Midwest. Both heating oil and industrial-grade fuel oils are very scarce and inadequate for meeting demand.

Shipments Behind

Tight markets continue to prevail in the upper Mid-Continent refining district, due to scarcity of both materials and tank cars, some plant owners being several days behind on shipments, particularly in the case of fuel oils. Round trips to the East still require three weeks from the Tulsa area, and some cars are idle because of the lack of repair parts. Demand for premium-grade gasoline continues strong, but sales of low-octane material are lagging, in reflection of motorists' desire to obtain maximum mileage on rationed gasoline. Storage of third-grade gasoline is not considered excessive, however, and when agricultural activities revive, the demand is expected to increase. All available supplies of fuel oils are thirstily absorbed, and some refiners are obliged to prorate those oils among regular customers while endeavoring to keep shipments moving to the East, in order to retain tank cars. The shippers must continue the Eastern movement or give up cars. Markets for Mid-Continent lubricants are unstable, following extension of mileage rationing throughout the country, and considerable variations between sales prices are reported, with different sellers making different concessions below posted prices.

Gulf Coast refiners continue engaged, in some instances, largely in local business, with transportation unavailable for shipping to the East, although inquiries are reported from all along the Atlantic seaboard.

Western Pennsylvania markets are generally steady except on lubricants, which remain relatively weak. Price concessions still are made on neutral oils, although bright and cylinder stocks are closely held and in good demand, particularly by the government. Wax also is moving steadily to regular customers and the government. Heating oil and kerosene are moving out constantly as produced.

Gasoline Price War Breaks in California

A gasoline-price war, involving major and independent refiners in California, broke into the open January 21 when Richfield Oil Corporation announced a cut of 1½ cents a gallon on all three grades sold in Fresno and Lodi districts, to the following scale, Ethyl, 20 cents; regular, 18 cents; third structure, 16 cents, based on wholesale scale of Ethyl, 16 cents; regular, 14 cents, and third grade, 13 cents.

Richfield executives said the reductions were made to meet price scales offered by competitors to members of milk, grain, apple and other producers cooperative associations. They further disclosed that the company recently had made other cuts in Pomona, Oceanside, Modesto and Hemet areas.

Check with independent refiners and marketers reveals that the market situation in California this week suddenly began to show marked deterioration. Distress wholesale supplies this morning were being offered, for the respective grades, at 10, 9½ and 9 cents a gallon inclusive of taxes. Apparently effects of rationing are more severe than had been anticipated. Also, some refiners complain, a very limited spread of purchases of military needs has left many suppliers with only the attenuated outlets of the domestic market.

Southwest and California Get Higher Quotas in February Production Boost

Production of petroleum liquids will be stepped up 38,100 barrels daily next month, under allocations announced January 21 by PAW.

A production rate of 4,162,300 barrels daily was set by the agency for February, comparing with 4,124,200 barrels for the current month and an actual output of 4,311,500 barrels in February, 1942.

In the shifting of allocations, eight states were given higher quotas than for this month, four Southwestern States and California being upped to conform with the increased outlet available for movement of their oil, five states were given reductions and seven were left unchaged.

In District 1 daily output is raised to a new high of 85,500 barrels from 83,100 barrels for this month, all of the increase going to West Virginia, which is increased from 17,000 to 19,400 barrels, New York and Pennsylvania continuing their present rates of 15,400 and 50,700 barrels, respectively.

District 2, production is cut from 1,092,000 to 1,091,000 barrels daily. The allocation for Kansas is raised from 310,000 to 310,500 barrels, and that for Kentucky from 14.200 to 19,000 barrels; Indiana at 17,200 barrels and Michigan at 63,700 barrels, are left unchanged, and allocations are reduced for Illinois from 272.600 to 272,200 barrels; Nebraska from 3400 to 3000 barrels; Ohio from 10,300 to 10,100 barrels, and Oklahoma from 400,600 to 395,300 barrels.

Production in District 3 is raised from 2,007,900 to 2,036,300 barrels daily. Mississippi remains unchanged at 50,000 barrels, but raises are given Arkansas from 78,300 to 78,700 barrels; Louisiana from 347,500 to 349,800 barrels; New Mexico from 105,300 to 105,800 barrels, and Texas from 1,426,800 to 1,452,000 barrels.

The allowable for District 4 is reduced from 126,200 to 125,800 barrels, the cut being confined to Wyoming which is given a quota of 94,100 barrels, Colorado and Montana being unchanged at 7000 and 24,700 barrels, respectively.

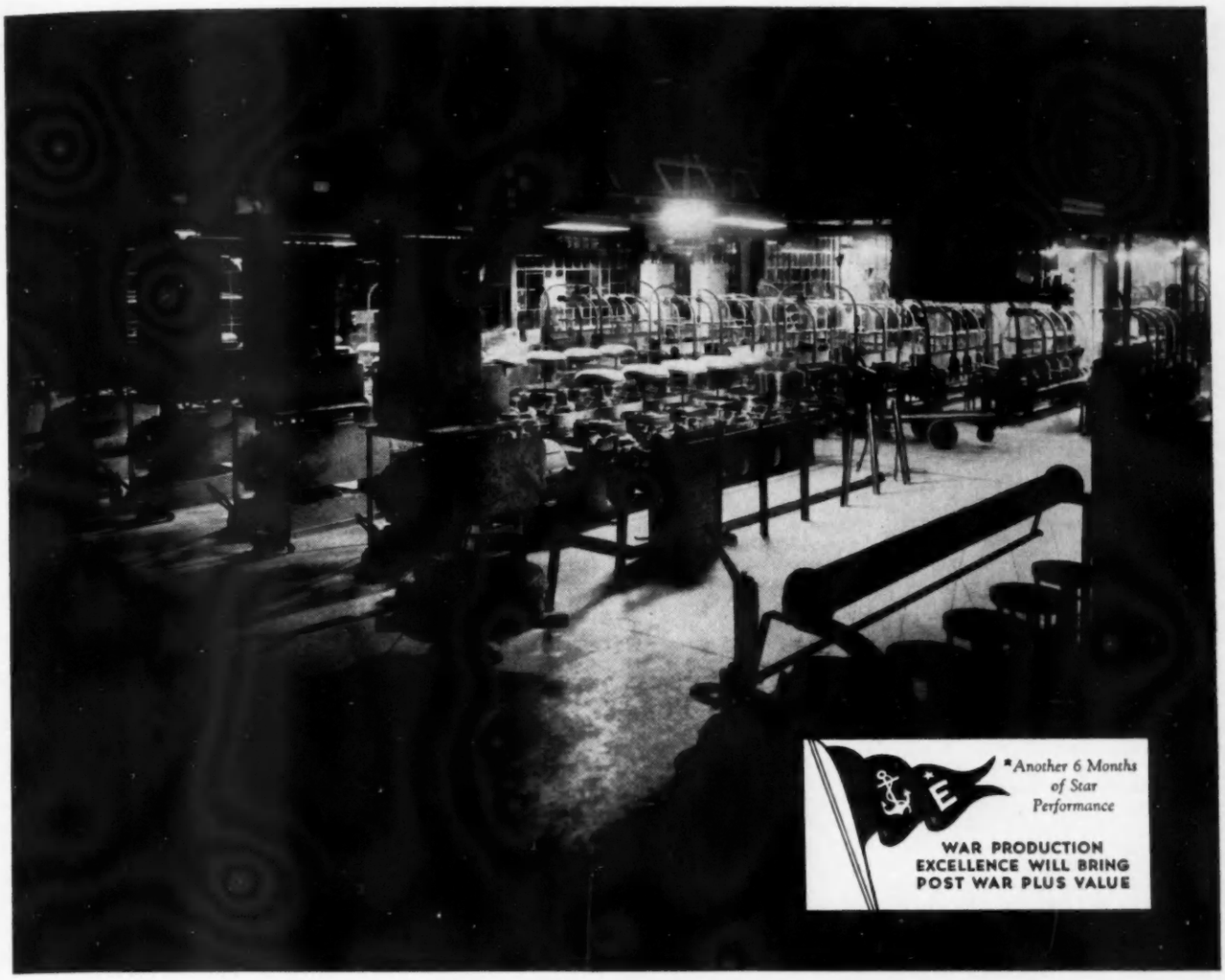
California production is again increased from 815,000 to 823,700 barrels.

Texas Fields Produce 18 Days in February

The Texas Railroad Commission's proration order for February fixes a net allowable of 1,424,783 barrels daily, and allows most fields to produce only 18 days during the month. There were 20 producing days in January, but because of the smaller number of calendar days, allowables will average about the same for February except in those fields where raises were ordered.

The commission estimated that operators would fail to produce 6.22 percent of the daily allowable, or 88,622 barrels, which would leave a net crude oil allowable of 1,336,161 barrels. To this is to be added distillate and condensate production totalling 116,553 barrels, which means that Texas should produce 1,452,-714 barrels daily of all oils during February. Ths is 714 barrels higher than production recommended by the Petroleum Administrator for War.

The oil allowable was increased 33,-



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039 barrels daily above the figure set for January 1. Part of this resulted from the increase of 25,300 barrels ordered by PAW, and the most of the remainder came from an increase in estimated under-production and a decrease of 3637 barrels in estimated condensate production.

West Texas got most of the increase, a total of 26,750 barrels per day. Virtually every other district was increased by a small amount.

Set out below are the comparative figures for January 1, 1943, and those provided in the new order:

	Jan. 1	Jan. 21	Increase
1 Southwest	20,687	20,597	90*
2 Southwest	82,247	82,680	433
3 Gulf Coast	286,724	288,325	1,601
4 Southwest	109,846	109,904	58
5 East Central .	18,440	18,535	95
East Tex. Field	330,597	329,808	789*
6 East Central ..	85,678	87,345	1,667
7B West Central.	27,108	27,436	328
7C West Central.	18,535	18,630	95
8 West	189,731	216,481	26,750
9 North	125,108	126,312	1,204
10 Panhandle	97,053	98,730	1,677
Total....	1,391,754	1,424,783	33,039
Less Underprod.	84,201	88,622	4,421
Net	1,307,553	1,336,161	28,608
Distillate	119,290	116,553	3,637*
Total....	1,426,843	1,452,714	25,871
PAW Recom. ..	1,426,800	1,452,000	25,200
Over PAW	43	714	671

*Decrease.

Fields which are exempt from shutdowns, or have a different number of producing days are listed below:

Three shutdown days: District 2: Heyser, West Ranch. District 3: Lovell's Lake, Amelia, Sugarland, Clear Lake, Webster. District 4: Orange Grove, Hoffman, Rincon. District 8: Yates. District 9: Angelope (Mississippi lime), Bonita, Chapman-McFarlin, Clingingsmith, Hapgood, Hoefle, Kadane Shallow, Mankins, Mueller, Ringgold, Sanders, Scotland, Scotland (Mississippi Lime), Wilson, Forestburg, Worsham-Steed, Rock Crossing (Ellenberger).

Four shutdown days: East White Point.

Six shutdown days: District 8: Emperor, Slaughter, Waddell. District 10: Panhandle.

Thirteen shutdown days: District 8: Abell, Abell Permian, North Cowden Deep, South Cowden.

Exempt: District 1: Darst Creek, Imogene, Loma Alta, Luling-Branyon, Pearsall (Navarro Sand), Salt Flat. District 2: Cordele, Harmon, Mellon Creek, Mission River, Oakville, Plummer, Victoria, West Mauritz, Collier, Mustang, Poth, Stewart. District 3: Arriola, Bammel, Barbers Hill, Batson New, Beaumont West, Boling, Buckeye, Clay Creek, Conroe, West Conroe, Cotton Lake, Cotton Lake South, Damon Mound, Danbury Dome, Esperson Dome, Eureka Heights, Eureka Heights Deep, Goose Creek, High Island, Hitchcock, Hull, Humble, Humble Light, Kubela, Livingston, Lochridge, Louise, Mercy, Magnet-Withers, Manvel Oligocene, Markham, Mykawa, Mykawa New, North Dayton, Orange West, Raccoon Bend Shallow, Raccoon Bend Cockfield, Sandy Point, Stowell, Silsbee, Turtle Bay, Thompson South, West Columbia, West Columbia New, North Withers, North Bay City, Bucksnag, Danbury Dome (5655-foot sand), Hampton, Livingston (Sparta), Livingston (Wilcox). District 4: Boyle, Charamousca, Clara Driscoll (3800-foot sand), Eagle Hill, Minnie Bock, Moca, Nichols, Seven Sisters, Sam Fordyce, North Sam Fordyce, Plymouth, White Point, Cadena, East, Quinto Creek, North Sun. District 5: Mexia, Powell, Richland, Sulphur Bluff, Weiland, Wortham. District 6: Boggy Creek, Coke, Cayuga, Grapeland, Hawkins, Lone Star, Larissa, Pittsburg, Quitman, Talco, Rodessa. District 7B: Grogan, Eastland County, Erath County, Loving County. District 7C: Beddo, Big Lake, World. District 8: Hendricks, Howard-Glasscock, Iatan-East Howard, McKee, Robertson, Jamison-Pollard, Leck, Monroe, Taylor-Link, Snyder, Welsh, Embar Permian. District 9: Cooper, Johnson (Cooke County), Fargo, KMA Ellenberger, Hildreth, Hults-Owens, Joy-Mississippi Lime, Antelope, Vogtsberger, Walnut Bend, Padgitt (Mississippi), Burns Ragland (Mississippi), Knox (Mississippi).

November Production Off; Stocks of All Oils Decline

Daily crude oil production in November dropped to 3,870,000 barrels from 3,881,000 barrels in October and total production in the month dropped to 116,101,000 barrels from 120,311,000 barrels, it was reported January 18 by the Bureau of Mines.

Kansas continued as the only record-breaking state, with a November average of 294,400 barrels—1600 barrels above that for October and 45,900 barrels above November, 1941, the bureau announced. Most of the states showed little change in daily average; Texas was off slightly despite a gain in the Panhandle; Oklahoma's average of 370,300 barrels, the lowest (barring shutdowns) since 1922, and Kentucky's output increasing materially as the result of developments in the new Burbank field.

The bureau emphasized that the total initial of the 765 oil wells completed in November was only 126,500 barrels daily, compared with 646,000 barrels from 1723 wells in November, 1941.

The small decline in production was about balanced by a drop in crude runs to stills, but because of larger exports and losses the withdrawal from crude stocks increased from about 2,000,000 barrels in October to about 3,500,000 barrels in November, the report stated.

Daily average crude runs to stills decreased from 3,754,000 barrels in October to 3,746,000 barrels in November, but the yields of products continued generally at variance with forecasts based on overall requirements, and the yield of gasoline again rose—from 38.6 to 38.8 percent—while the distillate yield declined, from 16.2 to 15.6 percent. On the other hand, the yield of residual increased from 26.9 to 27.9 percent.

Total demand for motor fuel in November was about 53,900,000 barrels, which was only 5 percent below the same month in 1941 and actually higher than in October, the bureau found. Gasoline stocks continued to fall as a result of continued heavy demand and totaled 73,216,000 barrels on November 30 compared with 87,278,000 barrels on the same date the year before.

Natural gasoline production totaled 7,156,000 barrels for the month, down 100,000 barrels from October, and the output of benzol was 123,257,000 barrels, a drop of 4,310,000 barrels. There was a decline of 9,047,000 barrels in stocks, all oils, which on November 30 included 234,100,000 barrels of gasoline-bearing crude in the United States, 10,724,000 barrels of heavy crude in California, 4,996,000 barrels of natural gasoline, and 252,713,000 barrels of refined products, a total of 502,533,000 barrels.

Bureau of Labor Statistics' figures placed the price index for petroleum and products at 60.7 in November, compared with 60.6 in October and 60.4 in November, 1941. The crude-oil capacity represented in the report was 4,559,000 barrels, a decline of 146,000 barrels from October, and the operating ratio was 82 percent, the same as in October, compared with 88 percent in November, 1941.

Natural Gasoline Output Continues Gain

Production of natural gasoline and allied products again increased in November, reaching a daily average of 10,018,000 gallons, against 9,831,000 gallons in October, it is disclosed by the monthly report of the Bureau of Mines.

The most outstanding gains occurred in the Panhandle and Texas Gulf districts and in West Virginia.

November production of light products, the bureau reported, included 167,790,000 gallons of natural gasoline, 55,902,000 gallons of cycle products, 11,424,000 gallons of iso-butane at natural gasoline and cycle plants, 65,436,000 gallons of liquefied petroleum gas at natural gasoline and cycle plants and 17,094,000 gallons of liquefied refinery gas at refineries.

Demand called for 209,538,000 gallons used at refineries, 36,540,000 gallons of natural gasoline and cycle condensate to jobbers and retail outlets, 45,234,000 gallons of liquefied petroleum gas and liquefied refinery gas for fuel and chemical use, and 43,596,000 gallons for exports and losses.

Stocks decreased during the month, those at plants and terminals dropping from 135,786,000 to 122,640,000 gallons and at refineries from 92,022,000 to 87,192,000 gallons.

Revenue Bureau Releases 1940 Earnings Figures

Corporations engaged in oil and gas production paid dividends, in cash and assets other than their own stock, of more than $99,000,000 in 1940, and declared excess profits of $15,700,000 on 1940 operations, it is disclosed by the Internal Revenue Bureau. A bureau analysis of 1940 corporation returns showed 4945 engaged in production, of which 1720, with total receipts of $378,162,000 and net income of $59,923,000, paid income taxes of $12,291,000 and excess profits taxes of $41,000, reporting dividends of $84,794,000, while another 2747 companies, with total income of $260,162,000, had a deficit for tax purposes of $58,752,000, but reported dividends of $10,806,000. The remaining companies were inactive.

Returns of 704 corporations engaged in field service operations, showed that 272, with total receipts of $97,674,000 and net income of $11,217,000 paid income taxes of $2,358,000 and excess profits taxes of $34,000, reporting dividends of $3,536,000, and 355 others, with total receipts of $33,699,000, had a deficit of $3,023,000, and reported dividends of $256,000.

Kansas Hearing Set

Kansas Corporation Commission has set January 26 as the date to hear market demands of Kansas operators and to set allowables for February.

U. S. Field Operations

Well Completions Showing Gain but Far Behind Same Period Last Year

Completion of 343 drilling operations reported during the week included 57 wildcats, 5 of which were oil producers. Total wells reported completed so far this year is 1322 as compared to 2210 at the comparable period last year. However the latest week's report is an increase of 65 over the report for the previous week. (See page 56.) Reports from several districts also indicate probable pickup in wildcat drilling.

Michigan results during the first three weeks of the year already have been more encouraging from the standpoint of adding reserves than was the whole of last year.

Contrasting its court action which is both loud and malodorous, California is the site of a drilling operation that will be both noiseless and odorless—if the elaborate precautions taken to that end are successful. This operation is to prove or disprove a long debated contention that a sizeable deposit of oil underlies a part of the city of Los Angeles.

Illinois had another pool added in Edwards County and there still is hope for the strike near Springfield (30 miles from production) where water is being swabbed with hope that the small amount of oil showing will increase.

Both Kansas and Oklahoma had new pools to report. In Pottawatomie County, Oklahoma, a flow of 35 barrels per hour was reported while test had not exhausted drilling mud, and in Kansas a stepout from the Ray pool in Phillips County is proposed as a new field.

North and West Texas had little to report in the matter of new production, but more wildcats are being planned as result of showings of tests in the south end of the state. Texas Coast operators still have ambitions for the Wilcox trend.

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Illinois Basin

New Pool Opened in Edwards County; Still Hopeful of Christian County Well

A new Edwards County pool opener swabs 4 barrels an hour. Christian County discovery well testing production as lease and royalty play continue on a wide scale. Weiler sand expected to become the third productive formation in the rapidly expanding Iola field, Clay County. Wayne County wildcat shows for 300 to 500 barrel producer and may revive activity in the East Barnhill pool. New productive horizon in sight for Wabash County pool in Friendsville area. Big producer completed in Mt. Vernon field, Jefferson County.

A 32-year-old Benoist sand well in the old Bridgeport field, Big Four's Buchanan 7, SW SE SW 8-3n-12w, Lawrence County, deepened from 1630 feet to Osage lime at 2765 feet, Friday flowed three heads of oil in two hours, the first Osage producer in the state. The oil tested 35.9 gravity. The well has spurned interest in the possibilities of a deepening program throughout the Eastern Illinois fields. Buchanan 7 has been shut in for tanks.

Edwards County: Burr Lambert's Vanshoick 1, NW SE NW 18-1n-10e, 9 miles north and 2 miles west of Albion in wildcat territory, swabbed 4 barrels of oil an hour after being deepened to 3175 feet. It is producing from Aux Vases sand.

Christian County: William H. Marlow's Alice Ralph 1, Section 27-15n-2w, 22 miles southeast of Springfield and 30 miles from production, was swabbing water with a show of oil but it was believed the oil content would increase as the hole is cleaned out. The producing formation is the Devonian lime at 1905-08 feet. After plug was drilled there was 550 feet of fluid in the hole. Because there has been no previous production in the area, leases and royalty were "wide-open" which has caused an acting leasing and royalty campaign.

Wayne County: National Refining Company's Hill 1, SE 29-2s-9e, ½ mile east of the East Barnhill pool, is showing for a 300- to 500-barrel producer. After flowing by heads from McClosky the well was shut in and is to be put on pump.

Wabash County: Magnolia Petroleum Company's Amy Newkirk 1, NE NW NE 34-1n-13w, was shut down, awaiting a government permit, after showing for a producer from McClosky lime at 2668 feet. Other production in the area, near Friendsville and 6 miles northwest of Mt. Carmel, is from the shallow Biehl sand. On a drill-stem test 60 feet of drilling mud and 2008 feet of clean oil were recovered. The well was drilled on a 10-acre location and because it is deeper than 2500 feet the company must obtain a special permit for its completion.

Jefferson County: Nash Redwine's E. M. Randolph 1, SW SW SW 27-3s-3e, produced 500 barrels of oil in 9 hours after a shot of nitro in Aux Vases sand at 2755-77 feet, for the best production tests yet reported in the Mt. Vernon field.

Indiana

Gibson County: Superior Oil Company's S. B. Thompson 1, NW SE NW 25-2s-12w, 2½ miles north of Owensville and 6 miles from production, was moving in rotary.

Vanderburgh County: Roy Lee, Trustee, Oakland City College 1, E½ SE SW 3-7s-11w, wildcat southwest of Evansville, was dry through the McClosky at 2501 feet. McClosky break at 2446-58 feet failed to carry a show.

Kentucky

Henderson County: Miller & Shiarella's Ed Willett 1, NE SE SE 16-P-21, wildcat three miles south of Smith Mills pool, was drilling at 1500 feet. Cherry & Kidd's W. Lilly 1, SW NE SW 23-Q-21, wildcat one half mile north of Smith Mills pool, was moving in rotary.

Carter Oil Company's S. T. Denton 1, NE NW SW 21-O-23, wildcat three miles west of Robards, set casing at 2356 feet on Benoist sand saturation at 2361-73 feet, which on drill-stem test showed 1590 feet of clean oil and no water in two hours. Hole was bottomed at 2744 feet, through the McClosky, and plugged back.

Union County: R. S. Gardenhire's Drury 1, Carter Oil Company farmout, NE SE NE 2-O-20, wildcat two miles southwest of Hitesville, was drilling at 2423 feet, Starting at elevation of 424 feet, Glen Dean was topped at 2012 feet. Cypress core at 2272-83 feet was dry.

Illinois Basin Completions on page 56

Oklahoma

Production Test Being Made On Pottawatomie Strike

Ranking as number 1 in interest in Oklahoma in the past 6 months, Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Bleeker 1, NW SE SW 28-10-2e, Pottawatomie

County, a wildcat near Shawnee has, as previously indicated, opened a new Wilcox (Ordovician) sand field. The sand was topped at 5877 feet and drilled to 5883 feet, with pipe cemented at 5874 feet. Gravity of the oil was checked to 40.3, corrected, after the initial and incomplete test which made 122 barrels in two minutes. Seismograph is responsible for the find in an area where previous shallow wells failed to show deeper structural information.

On first production test made Friday January 22 the discovery produced an average 35 barrels of oil per hour for 4 hours through 1-inch tubing choke. Production was accompanied by about one million feet of gas. Mud and drilling water accompanied the flow, indicating the sand body is not yet clean of drilling fluid.

Stephens County: Another test of the deep possibilities of the Fox-Milroy area, active to the deeper levels below shallow production four years ago, is being made by The Texas Company's Harley 1, C NW SE 24-2s-4w, southwest of previous exploration. Ordovician at or near 8000 feet will be the goal.

Seminole County: Continental Oil Company and Kerlyn Oil Company's Scott 1, NW SE SW 3-10-7e, a recent Hunton lime strike, is testing and making from 20-23 barrels per hour with considerable gas, from 4178-4270 feet.

Pottawatomie County: Continental Oil Company and Kerlyn Oil Company's Weaver 1, NW NE NE 32-8-3e, remains incompelte but indicated its productivity when, during running of tubing, it was estimated good for 50 barrels per hour from Hunton lime, perforated at 4664-4680 feet.

Oklahoma Completions on page 57

Kansas

Phillips County Well Indicates New Pool

Cities Service Oil Company's Hansen 1-C, SW SW SE 14-5-20w, north of the east edge of Ray field production in Phillips County, is testing with oil in the hole from perforation in Kansas City-Lansing lime at 3292 to 3331 feet. The drill entered granite wash at 3726 feet and basement rock at 3789 feet. Location is 3 miles from production, indicating a new pool.

Saline County: Deep Rock Oil Corporation's Hunter 1, NE NW SW 20-16-1w, opener of Hunter pool, has been given a temporary potential of 60 barrels daily from Mississippi chat at 2683 feet, and further testing is in prospect.

Pratt County: Cores taken from Skelly Oil Company's Knopp 1, SWc SE 25-26-13w, in Arbuckle dolomite with hole bottomed at 4341 feet, indicated porosity and showed fair saturation. It is being acid treated.

Saline County: Branine & Goering's Lindschield 1, NEc SE 34-16-4w, a wildcat has been located north of Lindsborg field, McPherson County.

Greeley County: Helmerich & Payne's McCormick 1, C NW NE 23-16-40w, on leases blocked by Stanolind Oil & Gas Company, is a wildcat drilling off-trend with nearest production in Patterson field, 42 miles southeast.

Rocky Mountain Area

Tensleep at Elk Basin To Be Given Attention

Two wells starting for recently discovered Tensleep zone in Elk Basin field, northern Wyoming. Deepening El Dorado wildcat, Colorado. Second Horse Creek well appears disappointing.

Elk Basin: The Ohio Oil Company is rigging-up rotary to deepen Mack-OPC-4 4, SE SW SE 30-58n-99w, 1/3-mile northwest, but on a separate fault block, from Minnelusa Oil Corporation and Yale Petroleum Company's Tensleep discovery, Elk Basin field, Park County, Wyoming, which made 80 barrels per hour. Hole will be deepened from 2830 feet where it completed for gas in the Cloverly (Dakota sand) several years ago. Minnelusa is rigging up rotary for Henderson 2, NE NW NE 31-58n-99w, west offset to its joint discovery and south offset to Ohio's deepening well, on the 40-acre spacing pattern for deep development. Elk Basin Tensleep production appears as Wyoming's most important development during 1942 and it is expected that upwards of a dozen deep wells will be drilled in the field in 1943.

El Dorado: Originally drilled by Continental Oil Company to 6381 feet in 1939 and abandoned and leases surrendered, Borra 1, SE NE SW 5-1s-69w, El Dorado structure, Boulder County, Colorado, was re-entered by Minnelusa Oil Corporation and Broderick & Gordon in September, 1942, and carried to 9264 feet where it was again abandoned. Kerlyn Oil Company has subsequently taken over leases and is coring through the Lakota to the top of the Morrison. If well fails in deeper drilling, operator plans to run a series of 7-inch liners, perforate and test a number of shows reported in the Hygiene through 2½-inch tubing. Hole is cased only with 427 feet of surface string. H. Leslie Parker of Denver negotiated the deals for deepening of the wildcat.

Horse Creek: Half a mile south of its Lakota-sand discovery, Horse Creek structure, Laramie County, southeastern Wyoming, General Petroleum Corporation's 74-6-P (Whittaker), SW SE NE 6-16n-68w, encountered water in the Lakota topped at 5612 feet, and is drilling for the Sundance at 5785 feet. Meanwhile, discovery has gone to about 65 percent water, greatly dimming prospects of what first appeared as a major Rocky Mountain discovery.

North Texas

Walnut Bend Extension Makes Good Strawn Flow

Walnut Bend field extension makes natural flow from Basal Strawn. Prospects in Jack County are disappointing. Archer and Clay counties assigned new wildcats.

Cooke County: Sinclair Prairie Oil Company's Winger 1, ¼ mile east of production in Walnut Bend field, flowed 110.7 barrels of oil natural on 3 hour official gauge from perforations in Basal Strawn at 5495-5535 feet. This outpost entered Simpson at 5537 feet on corrected measurement, and drilled to 5550 feet, but this zone was not tested for production after landing pipe on bottom. The company has scheduled additional tests for the east edge of the field, which is third largest producing area in the district.

Jack County: Youngblood & Foree's Cherryholmes-Gulf 1, G&BN 3, 10 miles northeast of Jacksboro, entered Ellenburger at 6565 feet, and the dolomite proved hard and dry in drilling to 6690 feet. It is to continue to water. Shell Oil Company's Wolfe 1, southeast corner of TE&L 3341, 3½ miles southeast of Jermyn, was drilling dry lime at 5145 feet, and without shows since passing up Bend section, topped at 4342 feet. Rathke Oil Company's Jagoda 1, ½ mile northwest of a wildcat gasser, was drilling shale at 4740 feet with a pay zone due near this level, having passed up gas with oil spray at 4471-4530 feet with increase at 4720-31 feet. Taubert-McKee and Sinclair Prairie Oil Company's Boyd 2, ½ mile south of their Taubert-McKee pool discovery, abandoned at 6501 feet without shows in Ellenburger, topped at 6270 feet, 15 feet high. Hanlon & Buchanan's Hensley 1-A, B. F. Terry Survey, 8 miles southeast of Jacksboro, tested water in Ellenburger at 5964-6070 feet, then cemented 5½-inch at 5228 feet to perforate nominal show at 5215 feet. Joe A. Worsham et al's Meador 1-A, Henderson CSL 22, one mile northwest of Gibtown, was drilling shale at 5550 feet, having failed to make a commercial producer in the 5200-foot zone.

Montague County: Continental Oil Company's Heard 1, southeast offset to its Stoneburg pool discovery, failed to flow after reacidizing with 5000 gallons in Bend conglomerate and lime at 5989-6096 feet. Hole was carrying 4300 feet of oil and acid sludge after preliminary swabbing to assure a pumper.

North Texas Completions on page 58

West Texas

Crockett County Test Has Shallow Oil Show

Ordovician project in Crockett County has been cased to test shallow oil horizon. Trio of Winkler County deep tests making slow progress in drilling chert near Ordovician objectives. Third wildcat contracted for Sterling County.

Crockett County: Moore Brothers and Olson Oil Company's Todd-Amerada 1, C SW SW EL 16, Blk YZ, 2½ miles northeast of shallow production, cemented 9⅝-inch on bottom at 1980 feet after logging possible oil production in broken lime and sand at 1842-50 feet and 1940-57 feet. This wildcat is contracted to 7500 feet, or Ellenburger, and may defer test of the shallow zones through perforations until drilling obligation is met.

Winkler County: Shell Oil Company's Blue 1, east edge of county, was drilling hard chert at 8585 feet, having negotiated about 200 feet of this pre-Permian zone. Magnolia Petroleum Company's Walton-State 20, between Keystone and Kermit fields, was drilling at 8515 feet in chert, topped at 7740 feet, with Permian-Devonian contact at 7620 feet, elevation 2934 feet. Amon G. Carter's Walton-Pure 2-C, Keystone field, was drilling chert with lime streaks at 7870 feet on a 10,000-foot

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depth contract. It logged top of Devonian at 7320 feet and Silurian at 7450 feet, elevation 2955 feet. Regardless of the outcome of these initial trys for Ordovician production in Winkler County, more deep prospecting is pending, and a test is due to be drilled in PSL Block B-10 or B-9, where substantial lease bonuses have been paid lately by late entrants.

Sterling County: B. C. Mann and associates have contracted to drill a 2250-foot test on the W. B. Atkinson ranch near C NW SW H&TC 122, Block 6. Honolulu Oil Corporation and Devonian Oil Company purchased lease spreads. Ohio Oil Company's Clark 1, 10 miles west of Water Valley, and Col-Tex Refining Company's Reed 1, 15 miles northwest of Sterling City, were drilling at 7405 feet and 6140 feet, respectively, on Ellenburger objectives.

Pecos County: Magnolia Petroleum Company's Eaton 1-29, H&TC 29, Block 3, 5 miles southwest of Abell field and 2 miles west by north of its Eaton-Abell 2, failure in Ellenburger at 5115-71 feet, was drilling at 5555 feet in chert, topped upon leaving Permian at 5410 feet, elevation 2430 feet. The new prospect is 284 feet low on the base of the Permian, but is in line to encounter Silurian before reaching Ordovician.

Gaines County: Shell Oil Company's Leaverton 1, wildcat producer in Clear Fork that has been in process of completion for some weeks, failed to show any appreciable gain in production after reacidizing with 10,000 gallons in broken pay at 7480-7772 feet. Production was estimated at 150 barrels of fluid daily on swabbing and flowing test. Prior to this treatment the well flowed 44 barrels, averaging 4½ percent bs&w, in 7 hours and swabbed 60 barrels, averaging 9½ percent bs&w, in 10½ hours of the 24-hour period. Failure of the water to exhaust after a lengthy production test indicates that it is formation water.

West Texas Completions on page 58

East Texas

Second Quitman Well Reaches Paluxy Sand

Confirmation test for the Quitman pool high gravity oil area entered Paluxy oil sand flat with the discovery well. Production was restored in Nacogdoches County deep gas distillate pool. Failures in Smith County.

Wood County: Shell's Goldsmith 1, quarter mile south offset to the Quitman pool discovery, entered the Paluxy series at 6226 feet, according to log, and recovered oil sand in the bottom of last core pulled at 6238 feet. This second test for the area will core the Paluxy zone before running pipe for completion through perforations. Top of Goodland Lime was called at 6160 feet with elevation of 458 feet.

Shell's Blalock 1, north offset to the producer, was straightening crooked hole at 3705 feet. Delta Drilling Company et al have derrick up for an east offset to their producer, and Amerada has scheduled a west outpost.

Nacogdoches County: The Texas Company's Strahan 1, first deep producer for the county, was awaiting acid treatment after indicating a daily natural flow of 1,500,000 feet of gas and 50 barrels of straw-colored distillate through ¾-inch tubing choke. Production is from 150 perforations at 8610-60 feet, opposite porous zone in top section of the Travis Peak. This zone showed for a gas-distillate producer early in January, but it was temporarily squeezed to test the 8900-foot section, which proved non-productive. A large gas potential is needed to attract a pipe line outlet, thus encouraging further explorations.

Smith County: Iowa-Payne Oil Company's Murray-Humble 1, 1½ miles northwest of Noonday, abandoned after recovering water in Woodbine at 5784-5825 feet. B. F. Phillips et al's Starnes 1, Friendship prospect, entered dry Glen Rose at 5760 feet and was awaiting orders at 5798 feet. No shows were encountered in Paluxy, topped at 5470 feet, elevation 407 feet. Sinclair Prairie Oil Company's Smith 2, Chas. M. Hyde Survey and on northeast edge of Chapel Hill field, failed to produce after acidizing through perforations opposite the upper portion of Pettit, topped at 8172 feet, elevation 438 feet. Additional perforations are scheduled in the Pettit, then upper zones will be tested. Chapel Hill field is without a failure, although an inside test quit after finding the Paluxy barren. Sinclair Prairie's Alexander 1, H. K. Carson Survey, confirmed an east extension in flowing 163 barrels of oil in 16 hours through ⅜-inch choke

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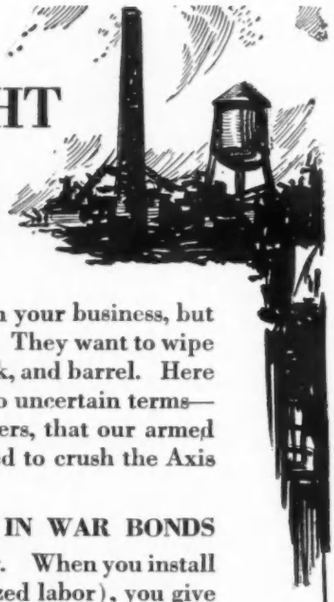

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after series of acid treatments in Pettit, topped at 8182 feet, elevation 464 feet.

Van Zandt County: A. F. Carter et al's Hazel 1, mile north of Fruitvale, developed a fishing job at 5300 feet on Paluxy objective and is to set whipstock near 4900-foot level to drill by.

East Texas Completions on page 59

Southwest Texas

Wildcats Testing in DeWitt-Karnes Area

With operators finding shows and opening new fields in the DeWitt-La-Salle-Karnes area, more wildcats are being planned to test deeper formations. As a result of these shows there has been a widespread campaign of geophysical activity and assembling of new drill blocks. This particular area has been "cool" until one or two wells found indications that it has good possibilities for Wilcox production. This Wilcox belt is not alone in finding new fields, however, with a new gas and distillate reserve tapped near Orange Grove in Jim Wells County in Vicksburg sand.

Karnes County: Phillips Petroleum Company is making first production test in Reasoner 1, wildcat in Carlos Martinez survey and 3½ miles southeast of Kenedy townsite. The well was drilled to 9500 feet, contract depth. Electrical survey was run, indicating production in Wilcox. Operators tested a sand at 6580-90 feet, recovering 600 feet of 47.5-gravity oil under 150 pounds pressure on a drill-stem test. It is this section that is due to be tested first.

In the same county but in extreme southern portion, American Liberty Oil Company is testing a wildcat that has indicated opening of a new field from Wilcox sand. The company has set pipe to 7016 feet, total depth, in Von Roeder 1, located in Burnell area. Sands showing gas and distillate were cored at 6610-30 feet and 6743-50 feet in top of Wilcox series. Another sand carrying oil odor was found at 6946-76 feet. This apparent discovery is two miles northwest of North Pettus gas and distillate production and four miles northeast of South Caesar field. Location is on 204-acre lease in James Johnson survey, abstract 164.

DeWitt County: Tide Water Associated Oil Company has set casing to around 8500 feet to test Mueller 1, wildcat a half mile northeast of gas-distillate discovery at Nordheim, near Karnes County line. Tests will be made in Wilcox. Bottomed at 9500 feet, the Wilcox was topped around 7045 feet. Sands were logged at 7060-70 feet, 7080-7100 feet, 7150-66 feet, 7182-95 feet showing oil odor. Sands showing gas odor were logged at 8164-75 feet and 8255-65 feet. A sand showing oil was logged at 8395-8400 feet. This last sand is due to be tested first, although the well is reported to have run slightly lower structurally than the discovery.

LaSalle County: Quintana Petroleum Company of Houston has staked South Texas Syndicate 1-D, 8500-foot wildcat 14 miles south of Fowlertown in southeastern LaSalle County. It is spotted in southwest corner of H&GN 8 and is four miles southwest of discovery at Green's Branch gas discovery in McMullen County.

Wildcats: Darby Petroleum Company of San Antonio has staked Bankhead 1, projected 7000-foot Frio test southeast of Inez, Victoria County. This well, if its objective is reached, will be one of deepest tests ever drilled in the area. It is on a 152-acre lease in Fernando de Leon grant, abstract 67. It will be a thorough test of Frio section. Reported but not officially announced is that The Texas Company is preparing to drill a wildcat in northeast portion of Victoria County on Wray acreage.

H. J. Porter, Houston operator, has taken a farmout from John Camp of San Antonio to drill a 5000-foot wildcat on John Dunn Ranch in Duval County. Drilling is due to start soon.

Jim Wells County: Republic Natural Gas Company is opening a new distillate field two miles southwest of Wade City field and one mile west of Orange Grove townsite. The well is Straube 1 and is now running official gauge after flowing gas and distillate from perforations at 4800-04 feet in McNeill sand of Vicksburg through 5/64-inch choke. Sand was logged at 4797-4820 feet—gas sand showing up at 4797-4816 feet and water and oil showing up in sand at 4815-20 feet. Depth is 5203 feet with 5½-inch casing set to 4978 feet. This discovery is on west 137-acre tract of 220-acre tract in block 14, I&GN 501, abstract 246.

Southwest Texas Completions on page 58

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Texas Gulf Coast

More Wells Planned To Test Wilcox Sand

The Wilcox trend still continues to bask in the main oil development spotlight since the area is receiving more attention of geophysical crews and with new wells planned or testing. Since the discovery of production in this sand at Mercy in San Jacinto County early in 1942, this county and adjacent areas are being worked extensively with geophysical parties, particularly around old Cockfield-sand prospects. A wildcat that has penetrated the Wilcox and is now testing in this formation is in Colorado County.

Colorado County: Magnolia Petroleum Company is preparing to drill an 11,500-foot wildcat to the Wilcox in the Chesterville area, and if the objective is reached, will be the deepest well ever drilled in the area. It is Anderson Brothers 1, and is spotted on south 40 acres of Section 15, two miles southwest of Chesterville. Gulf Oil Corporation has acreage to the west while Stanolind Oil & Gas Company has leases south of the well site.

Meanwhile, Cities Service Oil Company is testing a wildcat in the Ramsey area, Colorado County, that has indicated opening of new field. The well is Frank Stephens 1 in P. K. Bartlesson survey, abstract 84. With the hole bottomed at 10,505 feet and 5½-inch casing set to 10,504 feet, the well is credited with having around 100 feet of sand in three sections, reported to be capable of making a gas and distillate well at least. Operators perforated pipe at 10,501-504 feet to squeeze off any possible water sands before moving up hole to perforate for production. Wilcox sand was topped at 8215 feet.

San Jacinto County: Sid Brewster and Bill Bartle have staked an 8500-foot wildcat test, contracted to Wilcox, nine miles east of Shepherd in San Jacinto County and being across the river from Ace field in Polk County. It is on a 205-acre tract in W. G. Logan survey, abstract 24. It is on a geophysical prospect with several companies owning acreage in the area.

Extension: Sun Oil Company will attempt to extend production on northeast side of North Markham field, Matagorda County, in Braman 4, semi-wildcat well one-half mile from production. It is on 2903-acre tract in Hosea H. League survey and is projected to 9000 feet.

Texas Gulf Coast Completions on page 58

Louisiana Gulf Coast

Storage Tanks Built for Napoleonville Discovery

Storage tanks are being built for first discovery of year in the coastal area at Napoleonville in Assumption Parish. With the Miocene yielding production on flank of this piercement type salt dome, other locations are due to be staked for immediate drilling. Operator is sidetracking new gas discovery in North Crowley area of Cameron Parish after sticking pipe.

Assumption Parish: George Echols and Tide Water Associated Oil Company are erecting storage tanks after completing Kessler & Sternfels 1, wildcat discovery on east flank of Napoleonville dome. Although official potential has not been run, the well flowed at rate of 8 barrels of 37-gravity oil hourly through ⅛-inch choke on first production tests. Perforations were made at 9032-39 feet after drilling to 10,474 feet and plugging back to 9050 feet. The well, located in Section 136-12s-14e, showed 1700 pounds pressure on tubing while flowing. The well is the fourth deep test to be drilled on the prospect, and William Helis et al are now drilling Armelise Planting 1, Section 17-12s-13e, on the southeast flank of the dome. Total depth is 10,758 feet, at which point electrical survey was run.

Cameron Parish: Jack W. Frazier is sidetracking Sweetlake Land & Oil 1, wildcat in North Crowley area, after sticking drill pipe when the well attempted to blow out two weeks ago. The well, located in NE NE 12-12s-7w, has been plugged back to around 5000 feet and will sidetrack to redrill to sands at 8715-45 feet which showed considerable gas and blew out. The wildcat is on a Stanolind Oil & Gas Company farmout and is being watched closely since the gas sand section was found.

Vermilion Parish: Humble Oil & Refining Company is reported making another test in Louisiana Land & Fur 1, wildcat discovery on Pecan Island prospect, after squeezing off perforations around 11,285 feet, which flowed considerable gas. Located in Section 34-16s-1e, the well is bottomed at 10,057 feet in shale.

Wildcat: Amerada Petroleum Corporation is preparing to drill a deep test in the Beaulieu area of West Baton

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Rouge Parish. It is Nelson 1 and is in Section 97-7s-12e, southwest of Port Allen. Drilling is due to start soon.

Field drilling as a whole for the coastal belt is showing a slight increase with permits being granted for the drilling of several wells on flanks of salt domes or to extend production.

California

Soundless, Odorless Test Started in Los Angeles

Decibels will become a factor in drilling next week when Shell Oil Company spuds the world's first "noiseless" oil well. The project is Verne Community 1 in Section 21-1-4, which location happens to be smack in the middle of the city of Los Angeles.

The company got its permission to transform this bit of urban environment into oil country by undertaking to meet the most onerous conditions ever imposed upon drillers. There must not be any noise, any smells nor any unsightly structures. Even the gaunt ribs of the derrick skeleton must be decorously clothed with sheathing and trim.

In Shell Oil Company's view the objective justifies all the bother because this well, a deep shot for the untested Miocene, may once and for all determine whether or not oil underlies a large part of the City of the Angels. Geologists for years have insisted it is there.

A picked corps of drillers already has installed a smoothly oiled electric outfit, nearest thing to muted drilling machinery to be found. The site has been neatly enclosed by hundreds of feet of high board fencing, and housing is now going up around the derrick. This is comprised of sheets of an asbestos-type material, in a double layer. Rock wool, as a sound absorber, is packed between the layers.

Located just off one of the city's most heavily traveled boulevards, the well is almost sure to become a mecca for sightseers. It is expected to go to 9000 feet.

Kern County: General Petroleum Corporation is grading roads for Railroad 1, a wildcat in Section 23-28-28, Round Mountain area.

To make a try for production about a half-mile northwest of Union Oil Company's unsuccessful F & W 1, South Belridge area, C. E. Beatty and C. M. Morse have staked a wildcat, O'Donnell 1, NWc 13-29-21.

Sacramento County: Richfield Oil Corporation has announced location of its initial gas test on its recently acquired 5700-acre lease from Natomas Company, as Natomas 1, in W½ 17-10-4, North Sacramento area.

San Luis Obispo County: Los Nietos Company's Holmes 1, Edna area wildcat, reported tar stains in silicitous gray-brown shale encountered at 2305 feet.

San Joaquin County: Amerada Petroleum Corporation, Bankline Oil Company and Honolulu Oil Company, in a joint wildcat venture, are surveying location, Section 9-4-7, near the town of Lodi, to test for gas.

Solano County: Amerada Petroleum Corporation has location for a gas test, Amerada 1, in SW 17-10-4.

California Completions on page 56

Michigan

Missaukee County Wells Flow Lends Encouragement

Developments first half of January have produced brighter prospects for Michigan than any combination of exploratory results during 1942. Completion of a good flowing well on the Aetna structure alone may be adequate to bolster the state's currently slipping production and weak reserve position.

Missaukee County—Aetna: Gordon Oil Company's Reams 1, S½ SE SW 26-22n-6w, flowed 954 barrels the first 24 hours on test, and continued to produce 904 barrels the second 24 hours and 668 barrels the third day, when the company started to cut back production. Flow was through 5-3/16-inch casing without tubing in the well. Reams 1 is 2640 feet west of the company's Blue 1, a last year discovery, and the first follow-up well for the area. Dundee was logged at 3813 feet with pay from 3816 to bottom at 3821½ feet. It correlated 23 feet higher than the discovery on the top of the objective formation. This appears to throw a fairly broad northwest-southeast axis that should provide a major pool.

Development action for the area now is expected to get under way as fast as the material situation will permit. Gulf Refining Company surveyed two locations, including the south offset, Gordon, Smith Petroleum Company, The Pure Oil Company, Walter Heintz and Cities Service Oil Company have checkerboard acreage within a mile or less of the new producer. Ownership of acreage is more diversified than any play that has been developed in the state in several years.

Sun Oil Company's State A-1, S½ SW NW 11-23n-5w, has averaged 110 to 156 barrels of fluid, 80 percent oil, by swabbing and flowing, from Dundee dolomite at 3239-40 feet. Initially, after a 2000-gallon acid treatment through 91 perforations of the 5-inch casing, the well swabbed 132 barrels in 18 hours and then flowed 336 barrels in 6 hours. A subsurface geological discovery with data correlated from shallow core tests and two deep wells, the wildcat is certain to bring more additional development. The Pure Oil Company, The Ohio Oil Company, and Sun Oil Company control 70 percent of the acreage. C. L. Maguire, Inc., which holds the 80-acre south offset, cleared the first location.

Clare County: The Pure Oil Company drilled Nearhood 1, Section 33-20n-6w, second deep well in the Winterfield pool, to 5090 feet and shut down for orders with the test carrying 1500 feet of oil and 2200 feet of water in the Richfield-Sylvania section. It probably will plug back to 5000 feet and acidize.

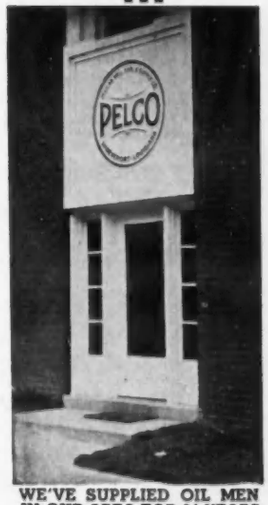
The Pure Oil Company's Moder 1, S½ NE SE 6-18n-4w, Grant Township, wildcat, logged Dundee lime at 4124 feet and picked up water below 4200 feet. It has been scheduled to be carried to the Richfield, about 5400 feet.

Roscommon County — Headquarters: Sun Oil Company set 5-inch casing on State A2, N½ NW SW 33-21n-3w, deepest test in the field, at 5570 feet, preliminary to a production test of a show of oil in Bass Island section of the Monroe logged between 5590 and 5631 feet.

Michigan Completions on page 57

Thanks, Pal!

From across the levee Liza could be heard screaming: "I didn't ast you ain't you is. I ast you is you ain't — now IS you?" Which qualifies Liza for a place on any Washington bureau where questions are so voluminously compiled for the further bewilderment of harassed business. We saw where some dewy eyed congressional fledgling proposed to do away with ambiguity and circumlocution in official matters. Thanks, pal. May your disillusionment leave you unembittered. And probably it will, for the stuff is contagious. Right now, we are working on a new version of TRY PELCO FIRST. Something a la Capitol Hill: Because of the dearth of oil and industrial supplies and equipment occasioned by diversion of vital materials into channels of armed dissension, our well-known perspicacity in matters of procurement should justify your preferred consideration when casting about, etc., etc.



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SHREVEPORT LOUISIANA

PELCO

Houston
Berwick
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New Iberia
Lake Charles

United States Well Completions

CALIFORNIA

Fresno County—Riverdale: Amerada's Young 74-16, 330 ft n, 990 w e¼c 16-17-19, flow, no est, perf 6700-6715 ft, Temblor 5552 ft, td 6900 ft.

Amerada's Courtney 2-23, 990 ft s, 330 e nwc 23-17-19, flow 924 bbls 28.3-gr, 20/64-in, 800/800 lbs, perf 6798-6815 ft, Temblor 5513 ft, td 6900 ft.

Amerada's Leal F-21-26, 560 ft s, 560 w n¼c 26-17-19, flow 30 bbls daily rate 14-hr test, sanded up, being re-worked, td 7100 ft, pd 6880 ft.

Kern County — Belridge South: General's Belridge 15A-3, 952 ft s, 805 w nec 3-29-21, pump 17 bbls, perf 529-562, 620-810 ft, td 815 ft.

General's Belridge 34-3, 698 ft s, 1211 w nec 3-29-21, pump 12 bbls 14.2-gr, 343 ft perf 794 ft, td 804 ft.

Ohio's Hopkins Fee 11, 1304 ft s, 1682 w nec 4-29-21, pump 26 bbls 13.9-gr, perf 543-704 ft, td 730 ft.

Ohio's Hopkins Fee 14, 1840 ft s, 233 w nec 4-29-21, pump 62 bbls 14.4-gr, 225 ft perf 858, td 860 ft.

Kern County—Buna Vista Hills: Standard's 119-27B, 2211 ft n, 1365 w sec 27-31-23, pump 24 bbls 27.7-gr, 517 ft perf 2017 ft, td 3020 ft.

Standard's 71-29B, 447 ft s, 1640 e nwc 29-31-23, pump 83 bbls 25.3-gr, 110 ft perf 3030 ft, td 3035 ft.

Kern County—Midway-Sunset: Richfield's Southwestern 13, 1917 ft s, 3692 e w¼c 2-31-22, pump 64 bbls 16.3-gr, perf 996-1120 ft, oil sand 1026-1110 ft, td 1195 ft.

Chanslor Canfield's G-21, 650 ft s, 740 w n¼c 27-31-22, pump 5 bbls 12-gr, 724 ft perf 1129 ft, td 1129 ft.

Standard's 118-5K, 60 ft s, 1250 w e¼c 5-11-23, pump 84 bbls, 27.1-gr, 7-in, 2799 ft, Kinsey zone 2787 ft, td 2801 ft.

Kern County—Mount Poso: Union's S & M 38, 1584 ft n, 60 e swc 4-27-28, pump 45 bbls 15.6-gr, 68 ft perf 1887 ft, Vedder 1818 ft, td 1888 ft.

Kern County—Poso Creek-Premier: Standard's 9-8, 312 ft s, 1653 w nec 8-28-27, pump 142 bbls 22.4-gr, 193 ft perf 2868 ft, td 2870 ft.

Kern County—Round Mountain: Bishop Oil Co.'s Thomas A, 233 ft s, 233 w e¼c 12-28-28, pump 120 bbls, 22 ft perf 1865 ft, Vedder 1844 ft, td 1865 ft.

Kern County — Williams-Antelope Hills: Shell's Williams 3-6, 1647 ft s, 342 e nwc 6-28-20, flow by heads, no est, 73 ft perf 2263 ft, shale 2263 ft, IB zone 2160 ft, IIB zone approx 2230 ft, td 2268 ft.

Texas Co.'s Voight 53-6, 990 ft n, 330 e c 6-28-20, pump 221 bbls 17.3-gr, 101 ft perf 2310 ft, 45-6 sand 2202 ft, td 2313 ft.

Los Angeles County — Huntington Beach: Standard's Huntington A-39, 617 ft n, 613 w c sec 3, flow 88 bbls 16.4-gr, ½-in, 220/450 lbs, 427 ft perf 3346 ft, td 3550 ft.

Los Angeles County—Montebello: Standard's Baldwin 97, 234 ft s, 1908 e nwc 1-2-12, pump 61 bbls 17.4-gr, 448 ft perf 2898 ft, td 2900 ft.

Los Angeles County — Wilmington: Texas Co.'s Refinery Fee 8, 220 ft s, 360 e sec State & Goodrich Aves., pump 66 bbls 16.2-gr, 152 ft perf 3603 ft, td 3603 ft.

Orange County—Yorba Linda: Shell's Olinda Fee 4 7-15, 2431 ft n, 362 e c/l Citrus & Eureka, pump 108 bbls 12.8-gr, perf 1606-1485, 1422-1342 ft, td 3120 ft, pd 1610 ft.

Shell's Olinda Fee 4 35-16, 3711 ft n, 3570 w c/l Citrus & Eureka, pump 5 bbls, perf 2227 ft, td 2848 ft, pd 2460 ft.

Santa Barbara County—Santa Maria Valley: Union's Bradley Lands 1-5, 990 ft s, 990 w c 25-10-34, flow 234 bbls 16.1-gr, died, prep to pump, 672 ft perf 4868 ft, Miocene 4120 ft, td 4869 ft.

Ventura County—Rincon: Honolulu's Whitten 56-4, 2280 ft sly 202 ft wly fr nec state lease No. 56, flow 1800 bbls, perf 2813-3022 ft, td 3024 ft.

CALIFORNIA WILDCATS

Kern County—Failures: Republic Petroleum Co.'s Portals 2, 330 ft s, 330 e c 5-20-29, abnd 4090 ft (Edison area).

Reserve Oil & Gas Co.'s 34-1, 990 ft s, 990 w n¼c 34-11-19, abnd in gray sand 4926 ft (Reserve area).

Chanslor Canfield's 16-35, 500 ft n, 1490 w sec 35-31-22, td 2895 ft, pd 2745 ft, abnd after unproductive test oil sand topped 2700 ft (Midway-Sunset area).

Santa Barbara County—Failure: General's Wickenden 1, 3500 ft wly along nly line ppty fr nec thence 500 ft sly at r/a, abnd 2905 ft (Gato Ridge area).

Solano County—Failures: Standard's Suisun Comm. 2-1, 2376 ft s, 2343 e nwc Cavanaugh property, 25-3-1, td 7300, pd 6650 ft, abnd. Domengine sand 6808 ft, Emigh 4678 ft, Ione 5025 ft, gas zone 6800-8210 ft, abnd 7300 ft (Solano area).

Standard's Suisun Comm. 1-2, 95 ft s, 2598 w common cor McGahie-Traung property on swly line Gun Club tract Grizzly Island, Green sand 2660 ft, abnd 6007 ft.

ILLINOIS

Clay County: Kingwood and C. H. Nickerson's Gatewood 1, c w½ ne ne 23-3n-6e, McCL 2995-99 ft and 2982-88 ft, 205 bbls, 3074 ft.

Texas Co.'s Rush 1, c se se nw 10-5n-5e, abnd 2588 ft.

Luttrell et al's Reed 2, c sw nw ne 15-5n-5e, abnd 2292 ft.

Texas Co.'s Kidwell 1, c se ne nw 15-5n-5e, Ben 2281-2317 ft and 2341-64 ft (Aux Vases), 200 bbls, 2488 ft.

Texas Co.'s Bloemker 2, c nw sw ne 4-5n-7e, Weiler 2501-22 ft, 65 bbls, 2528 ft.

Walter Duncan's H. Lewis 2, c nw se sw 9-5n-7e, Weiler 2527-41 ft, 190 bbls, 2541 ft.

Kingwood's Lewis 2, c nw sw sw 9-5n-7e, Weiler 2473-2524 ft, 104 bbls, 2529 ft.

Effingham County: Tidewater's Burk 6, c sw ne sw 27-6n-5e, Benoist 2300-24 ft, 22 bbls, 2385 ft.

Tidewater's Burk 7, c sw se sw 27-6n-5e, Benoist 2296-2310 ft, 60 bbls, 2312 ft.

Texas Co.'s Prather 1, c nw se ne 34-6n-5e, Ben 2240-72 ft, Aux V 2304-2330 ft, 75 bbls, 2356 ft.

Fayette County: Carter's McCay 3-D, c se nw 11-8n-3e, Dev 3129-30 ft, 52 bbls, 3130 ft.

Franklin County: Armstrong & Day's Wayman 2, c ne nw sw 1-6s-2e, Rosi 2803-11 ft, 32 bbls, 2811 ft.

T. M. Pruitt's Minier 3, c se sw sw 30-6s-3e, Tar Spgs 2102-10 ft, 25 bbls, 2110 ft.

E. S. Adkins' Peabody Coal Co. 2, ne nw sw 18-7s-3e, abnd 2076 ft.

Gallatin County: Carter's Duckworth 1, se se nw 33-7s-8e, Tar Spgs 1985-90 ft, 2 mcfg, 2007 ft.

Cherry & Kidd's Kerwin 11, c se nw sw 11-8s-10e, Tar Spgs 2065-76 ft, 20 bbls, 2076 ft.

Hamilton County: Shell's Beu 1, c sw se ne 12-6s-5e, Aux V 3119-31 ft, 14 bbls, 3142 ft.

Texas Co.'s Minton 4, c ne ne se 20-4s-7e, Aux V 3300-10 ft, 98 bbls, 3319 ft.

Texas Co.'s Irvin 1, c nw sw ne 35-6s-6e, Aux V 3104-16 ft, 209 bbls, 3116 ft.

Texas Co.'s Ledbetter 2, c sw se nw 21-4s-7e, Aux V 3310-22 ft, 40 bbls, 3326 ft.

Shulman Bros.' Hall 1-A, c se sw sw 8-6s-7e, abnd 3062 ft.

Texas Co.'s Hall B-10, c se sw nw 17-6s-7e, Weiler 2730-63 ft, 25 bbls, 2764 ft.

Jasper County: Gulf's Acklin 1, c sw sw 20-6n-10e, McCl 2838-55 ft, 14 bbls, 2856 ft.

Jefferson County: Gulf's Johnson-Gentle 1, c n½ sw nw 1-3s-4e, McCl 3102-07 ft, 33 bbls, 3113 ft.

Central PL's Mace 1, c nw sw 34-3s-3e, abnd 2834 ft.

Lawrence County: Brinkerhoff Drlg. Co.'s Putman 2, c nw sw ne 23-2n-12w, abnd 2013 ft.

Marion County: Broddus & Lilly's Lancaster Comm. 1, c ne nw nw 16-1n-1e, Weiler 1651-64 ft, 74 bbls, 1664 ft.

Richland County: Pure's Stiff 1, c sw ne 26-5n-10e, abnd 2993 ft.

Wabash County: W. E. Bailor's Liddle 2, c

Wells Completed in the United States in Week Ended January 23, 1943

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

STATE OR DISTRICT	FIELD COMPLETIONS — New Wells: Oil	Gas	Distillate	Water Input	Gas Input	Water Disposal	Dry	Total	FIELD COMPLETIONS — Old Wells Drilled Deeper: Oil	Gas	Dry	Total	WILDCAT COMPLETIONS: Oil	Gas	Distillate	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Alabama																					2
Arkansas																			5	6	8
California	24							24								6	6	30	31	106	86
Colorado																				3	
Illinois	27	1					10	38			1	1				13	13	52	16	149	224
Indiana		2					1	3			2	2	1				1	6	2	15	20
Kansas	13					1	12	26					2			3	5	31	24	122	180
Kentucky	4						1	5			1	1				1	1	7	2	18	11
Louisiana	4	1					2	7								2	2	7	13	36	94
North Louisiana																			3	5	
South Louisiana	4	1					2	7										7	10	31	
Michigan	5						4	9								2	2	11	5	30	64
Mississippi																					20
Missouri																					2
Montana																				12	17
Nebraska																					7
New Mexico	4							4								1	1	5	7	20	31
New York	12			7				19										19	17	71	99
Ohio	1	9					5	15		2		2						17	19	78	105
Oklahoma	6	2			1		4	13		1		1	1			8	9	23	15	110	180
Pennsylvania	41	3						44										44	42	179	282
Tennessee																					1
Texas	40	5	1				14	60	2			2	1			18	19	81	70	296	716
East Texas	2							2								1	1	3	1	11	
North Texas	9						6	15								2	2	17	11	66	
West Central Texas							3	3					1			1	2	5	7	22	
West Texas	12						3	15								2	2	17	16	63	
Texas Panhandle	1	4						5	2			2						7	7	25	
Gulf Coast, Upper	3							3								1	1	4	8	19	
Gulf Coast, Lower	8	1	1					10								3	3	13	9	46	
Southwest Texas	5						2	7								6	6	13	9	39	
South Central Texas																2	2	2	2	5	
West Virginia	1	7						8		2		2						10	10	64	54
Wyoming																				7	7
Total United States	182	30	1	7	1	1	53	275	2	5	4	11	5			52	57	343	278	1,322	2,210

sw nw sw 26-1n-13w, Biehl 1764-80 ft, 40 bbls, 1780 ft.

Bell Bros.' Smith 2, c se sw nw 9-1n-12w, abnd 1504 ft.

Seaboard's Guisewite 4, n½ nw ne 21-1s-12w, Cyp 1969-77 ft, 49 bbls, 2362 ft.

Washington County: Gulf's Brink 4, c nw nw sw 14-1s-1w, Cyp 1386-98 ft, 14 bbls, 1546 ft.

Wayne County: Pure's Richards Consol 1, e½ nw nw 20-1s-6e, abnd 3177 ft.

White County: Skelly's Fearn A-2, c se se se 19-3w-14w, abnd 3090 ft.

Shell's Kozuszek 9, c se se nw 23-3s-3w, Bethel 1262-74 ft, 5 bbls, 1282 ft.

Jarvis Bros. and Marcell's Spencer 11, c ne nw sw 31-4s-11e, Palestine 2047-67 ft, 150 bbls, 2358 ft.

Sun's Hoosier Spencer Unit 2, c sw nw nw 6-5s-11e, Tar Spgs 2338-62 ft, 5 bbls, 2726 ft.

Sun's Hoosier-Spencer 4, c se nw nw 6-5s-11e, Tar Spgs 2354-68 ft, 80 bbls, 2368 ft.

ILLINOIS WELL DEEPENED

Monroe County: Colum. Am. Dist's Fee 1, Columbia town lot 16-1s-10w, otd 867 ft, abnd 1685 ft.

ILLINOIS WILDCATS

Bond County—Failure: K. W. Kirkpatrick's Kagey 1, c se se nw 9-4n-3w, abnd 1160 ft.

Clay County—Failure: Henry Blackett's Harmon 1, c se se ne 27-5n-7e, abnd 2970 ft.

Cole County—Failure: W. L. Topf's Chambers 1, c nw nw nw 28-14n-10e, abnd 495 ft.

Edwards County — Failure: E. O. Olds' Whiteside 1, c e½ se ne 18-1n-11w, abnd 2262 ft.

Ohio's Harris 1, c se se ne 18-2s-10e, abnd 3475 ft.

Marion County — Failure: Lario's Holson 1, c sw ne 17-4n-4e, abnd 2394 ft.

Montgomery County—Failure: C. M. Stotts' Stotts-Richmond 1, nw sw sw 22-11n-5w, abnd 900 ft.

Shelby County — Failure: Roy Lee, Tr.'s Stevens 1, c se se sw 2-10n-4e, abnd 2040 ft.

St. Clair County—Failure: Smokey Oil Co.'s Emma Morris Comm. 1, c se se 14-1n-6w, abnd 2765 ft.

Smokey Oil Co.'s Kinsella Comm. 1, c nw se 16-2n-8w, abnd 2009 ft.

Washington County—Failure: Richardson & Rea's Brink 1, c nw nw nw 27-1s-2w, abnd 1584 ft.

White County—Failure: McBride's Milliken 1, c se se 4-7s-9e, abnd 3137 ft.

ILLINOIS WILDCAT DEEPENED

Randolph County — Failure: General O&G Co.'s Schmoll 1, c s½ 27-4s-7w, otd 969 ft, abnd 969 ft.

INDIANA

Decatur County: Public Serv. of Indiana's D. Schwering 234, c ne ne 22-9n-9e, Trenton 882-920 ft, 147,500 cfg, 920 ft.

Public Serv. of Indiana's D. Schwering 236, c nw nw 23-9n-9e, Trenton 885-923 ft, 136,230 cfg, 923 ft.

Posey County: Tidewater's Swonder 1, ne nw se 34-3s-14w, abnd 2887 ft.

INDIANA WILDCAT

Posey County—New Field: Superior Oil Co.'s Carr 1, nw ne sw 29-4s-13w, Clore 1885-90 ft, 33 bbls, 2963 ft.

INDIANA WELLS DEEPENED

LaPorte County—Failure: Steffy & Rhodes' Fritzen 1, se ne se 7-37n-2w, otd 890 ft, 1528 ft.

Posey County — Failure: Baldwin et al's Reichart 1, c se nw se 25-7s-15w, otd 2125 ft, 2200 ft.

KANSAS

Barton County—Kraft Prusa: Texas Co.'s Radenberg 3, ne nw ne 5-17s-11w, Arb 3362 ft, abnd 3377 ft.

Barton County—Trapp: Bartlett & Crumm's Susank 1, c ne nw 19-16s-13w, Arb 3445 ft, abnd 3455 ft.

Barton County—Silica: J. H. Hershey's Galliart 1, c sw nw 35-19s-11w, Arb 3301 ft, swab, 1994 bbls, 3312 ft.

Butler County — Eldorado: T. S. Dustin's Robinson 1, c e½ e½ sw 17-25s-5e, Stapleton 2503 ft, pump 100 bbls, 250X½ ft.

Cowley County—Weathered: Bess & Grallop's Vollweider 2, c nw sw 4-32s-3e, Arb 3453 ft, abnd 3553 ft.

Greenwood County — Virgil: Aikman & Braden's Meyers B-5, c n½ se se 10-24s-12e, Miss 1761 ft, shot 20 qts 1774-78 ft, 1500 gal acid, pump 50 bbls oil, 40 wtr, 1779 ft.

Greenwood County—Virgil Area: Aikman & Braden's Mennonite 1, c nw nw 11-24s-12e, Miss 1737 ft, pay 1742-54 ft, shot 40 qts, pump 20 bbls oil, 15 wtr, 1754 ft.

Greenwood County — Quincy: Dunne Bros.' Christy 1, ne se sw 9-25s-11e, shale 1667-1705 ft, salt wtr 1705-08 ft, abnd 1708 ft.

Marion County—Lost Springs: Kuhn Bros.' Holub 2, c ne se 32-17s-4e, Miss 2392 ft, pump 261 bbls oil, 27 wtr, 2426 ft.

McPherson County—SW Lindsborg: Winkler-Koch's Lillian 1, c w½ nw sw 30-17s-3w, Viola 3360 ft, pay 3370-72 ft, 4000 gal acid, pump 459 bbls, 3381 ft.

McPherson County—N. Canton: Winkler & Koch's Cunningham 1, c n½ ne sw 25-18s-1w, Miss 2824 ft, shot 5 qts, bail 17 bbls fluid per hr 50% oil, abnd 2857 ft.

Phillips County—Ray: Cities Service's Kohlman 2, sw ne ne 33-5s-20w, granite 3754 ft, abnd 3760 ft.

Pratt County—Iuka: Atlantic's Tritsch 1, c sw se 11-27s-13w, Simp 4323 ft, abnd 4337 ft.

Skelly's Hacker 1, c se nw 11-27s-13w, Simp 4321 ft, Arb 4423 ft, abnd 4450 ft.

Reno County—Peace Creek: Cities Service's Keesling B-3, sw ne se 1-23s-10w, Misener 3720 ft, 500 gal acid, swab, 824 bbls oil, 92 wtr, 3748 ft.

Sinclair Prairie's Crandall 3, c sw se 14-23s-10w, Viola 3754 ft, 500 gal acid, pump 3128 bbls, 3770 ft.

Auto Ordnance's Kemel 1, sw nw nw 33-23s-10w, Viola 3802 ft, 2000 gal acid, pump 51 bbls oil, 15 wtr, 3806 ft.

Rice County—Keesling: Cities Service's McGlynn 2, sw ne se 17-20s-9w, Arb 3298 ft, 1500 gal acid, pump 372 bbls, 3% b.s., 3307 ft.

Rooks County—Lation: Max Cohen's Doan 6, c s½ ne se 34-8s-16w, Lans 3102 ft, pb to 3143 ft, 4000 gal acid 3132-36 ft, pump 124 bbls oil, 75 wtr, 3198 ft.

Rooks County — Erway: Cities Service's Kirkwood 1, c s½ ne ne 11-10s-16w, Lans 3079 ft, abnd 3230 ft.

Russell County — Greenvale: Continental's Zeman 1, c s½ nw sw 9-15s-12w, Gorham 3310 ft, abnd 3330 ft.

Stafford County—Hazel: W. P. Faulkner et al's Fanschier 1, c e½ se se 20-21s-13w, Conglomerate 3668 ft, abnd 3796 ft.

Stafford County — Drach: Atlantic's Alpers B-1, c sw se 7-22s-12w, Arb 3679 ft, 1000 gal acid, pump 3924 bbls, 3685 ft.

Stanolind's Scheib 3, c se se 12-22s-13w, Arb 3673 ft, 1500 gal acid, pump 301 bbls, 3677 ft.

Sumner County—N. Vernon: Continental's Curry 4, nw sw sw 26-34s-2e, Miss 3449 ft, pb to 3469 ft, shot 25 qts, fill 300 ft fluid, swab 5 bbls wtr and scum of oil, abnd 3483 ft.

Rice County—Silica: Winkler's Koch's Fred Dueser 11, nw se sw 31-19s-10w, otd 3294 ft, granite 3804 ft, salt wtr disposal, td 3825 ft.

KANSAS WILDCATS

Butler County—New Field: J. J. Lynn's Vandenberg 1, sw se nw 35-27s-6e, KC 2116 ft, Simp 3183 ft, Arb 3219-20 ft, pb to 2118 ft, 3000 gal acid, 35 bbls, 3220 ft.

Cowley County—Failure: Benedum & Trees' Kufus 1, ne sw ne 26-30s-5e, KC 2295 ft, Miss 2945 ft, abnd 2950 ft.

Ellis County—New Field: Darby Petroleum Co.'s Huber 1, c w½ ne sw 31-12s-20w, Anhy 1535 ft, Topeka 3215 ft, Lans 3463 ft, Congl 3815 ft, Arb 3834-36 ft, 2000 gals acid, 337 bbls, 3884 ft.

Phillips County—Failure: Davis Child Motor Co.'s Byerlein 1, c sw ne 17-3s-18w, Anhy 1530 ft, Topeka 2980 ft, Lans 3202 ft, Congl 3586 ft, Arb 3606 ft, abnd 3664 ft.

Rooks County—Failure: Lario and Falcon-Seaboard's Nutsch 1, c w½ nw se 3-10s-20w, Topeka 3291 ft, Lans 3512 ft, Congl 3794 ft, Simp 3876 ft, Arb 3898 ft, abnd 3948 ft.

KENTUCKY

Henderson County: Imperial Oil Co.'s Iglehart 2, 10-0-25, abnd 2170 ft.

Milo B. Siegel et al's Dempewolf 2, 19-P-27, Palestine 1047-61 ft, 35 bbls, 1063 ft.

D. C. Bintliff's Burbank 4, 24-Q-21, Cyp 2303-10 ft, 300 bbls, 2310 ft.

Ohio County: Batten et al's O. T. Burdette 5-2, 9-O-33, Tar Spgs 530-65 ft, 8 bbls, 565 ft.

Union County: Carter's J. P. Robinson 1, 16-P-20, Walts 1802-16 ft, 83 bbls, 1816 ft.

KENTUCKY WELL DEEPENED

McLean County: Cameron & Son's Ashton 1, 5-M-28, otd 1360½ ft, abnd 1737 ft.

KENTUCKY WILDCAT

Henderson County—Failure: Carter's Eakins 1, 4-N-24, abnd 2638 ft.

SOUTH LOUISIANA

Jeff Davis Parish—South Roanoke: Continental's Jaenke 2, 1320 ft s & e nw c 24-10s-4w, abnd 9252 ft.

LaFourche Parish—Leeville: Texas Co.'s City of New Orleans 2, 3163 ft e, 3115 n swc 26-21s-22e, 7-in 3030 ft, perf 2988-94 ft, flow dry gas, no gauge.

St. Martin Parish—Lake Chicot: Amerada's Case & Kurzeg 2, 2730 ft e, 1540 s nwc 31-11s-10e, 5½-in 9360 ft, perf 7729-38 ft, 226 bbls, ⅛-in, td 9500 ft.

St. Martin Parish—West Lake Verrette: Shell's Jeanerette Lumber & Shingle 13, fr nwc 15, go s 00 deg 29 mins e 815 ft, thence n 89 deg 32 mins e 668 ft in 15-14s-12e, 5½-in 7506 ft, perf 7766-76 ft, flow 162 bbls, ⅛-in, td 7545 ft.

Terrebonne Parish—Gibson: Shell's Realty Operators 11-B, 892 ft s 33 deg 07 mins w alg el sec 15 fr ne cor and n 56 deg 53 mins w 718 ft in sec 15-17s-15e, 5½-in 9530 ft, perf 9197-9207 ft, 227 bbls, ⅛-in, td 9538 ft.

Vermilion Parish—Gueydan: Pure's Alliance 13, 2640 ft n, 1225 w sec 33-11s-1w, abnd 8852 ft.

Vermilion Parish — West Gueydan: Magnolia's Reese 1-B, 663 ft s, 687 w nec 5-12s-2w, 7-in 10,840 ft, perf 10,660-700 ft, 130 bbls, 6/64-in, td 10,842 ft.

MICHIGAN

Arenac County—South Adams: Don Rayburn's Lucas 1, c ne sw 30-19n-4e, dry, 3175 ft.

Don Rayburn's Miscisin 1, c sw se 30-19n-4e, dry, 3127 ft.

Bay County—Kawkawlin: Gulf's Phillips 1, s½ ne nw 34-15n-4e, Dundee lime, pump 14 bbls, 2936 ft.

Gladwin County—South Beaverton: Sun's Wright 2, e½ sw sw 26-17n-2w, Dundee lime, pump 22 bbls, 3898 ft.

Missaukee County—Aetna: Gordon Oil Co.'s Reams 1, s½ se sw 26-22n-6w, Dundee dolomite 3816-21 ft, flow 954 bbls, td 3821½ ft.

Osceola County—Evart: Sun's Becker-Wilcox 1, n½ nw nw 27-18n-8w, Dundee dolomite, flow 152 bbls in 16 hrs, 3764 ft.

Ottawa County—Zeeland: C. A. Perry's Prins-Nykamp 1, se se ne 31-5n-14w, Traverse lime, dry 1650 ft.

Van Buren County—Muskrat Lake: James H. Conant's Banks 2, ne se se 11-1s-14w, Traverse lime, pump 30 bbls, 1280 ft.

Van Buren County — Geneva: Harris Oil Co.'s Schmidt 1, sw ne sw 34-1s-16w, Traverse lime, dry 1056 ft.

MICHIGAN WILDCATS

Kent County — Failure: Dapar Oil Co.'s Porter-King 1, se sw se 26-5n-12w, Traverse lime 1777 ft, dry 1797 ft.

Lake County—Failure: W. S. Cook's Lannings 1, n½ nw se 30-17n-13w, Dundee 2878 ft, Monroe 2930 ft, dry 2953 ft.

NEW MEXICO

Eddy County: Paton Bros. et al's Russell 7-A, se sw se 35-17s-27e, pump 300 bbls, acid 1000 gals, 450-77 ft.

Skelly's Lynch 1-B, c se ne 27-17s-31e, abnd 4377 ft.

Geo. Turner et al's Wills 2, c ne sw 31-20s-38e, flow 36 bbls, shot 30 qts 812-27 ft, td 873 ft, pb to 858 ft.

Lea County—Eunice: T. P. Coal & Oil Co.'s State 24-A, c ne se 8-22s-36e, flow 72 bbls, 11/64-in, acid 6000 gals 3800-89 ft.

Lea County—Maljamar: Johnny Cockburn et al's Miller 8-B, c se ne 25-17s-32e, flow 590 bbls, 2-in, shot 200 qts, 4100-4200 ft.

NEW MEXICO WILDCAT

Roosevelt County—Failure: Malco Refineries, Inc.'s Bilverry 1, c se sw 1-7s-37e, elev 4022 ft, anhydrite 2150 ft, brown lime 3530 ft, San Andres lime 4185 ft, Glorietta 4830 ft, 7-in 4567 ft, td 5268 ft, pb to 4530 ft and junked without test.

NEW YORK

Allegany County: Vosburg Oil Co.'s Green farm, Bolivar, 16 bbls, Richburg, 1277 ft.

Bradley Prod. Corp.'s Bascom farm, Alma, 9 bbls, Richburg, 1423 ft.

R. B. Moore et al's Curtis farm, Bolivar, 10 bbls, Richburg, 1339 ft.

Star Oil Co.'s Neff farm, Wirt, 8 bbls, Richburg 1378 ft.

Curt Oil Co.'s Williams farm, Bolivar, 6 bbls, Richburg, 1370 ft.

Pat Oil Co.'s Shaughnessy farm, Alma, 5 bbls, Richburg, 1372 ft.

Summit Oil Co.'s Doty farm, Scio, 5 bbls, Richburg, 1279 ft.

J. & W. Oil Co.'s Sawyer farm, Wirt, 5 bbls, Richburg, 1419 ft.

Sawnet Oil Co.'s Merritt farm, Genesee, 7 bbls, Richburg, 1460 ft.

Bradley Prod. Corp.'s Smith-Gray farm, Clarksville, 6 bbls, Richburg, 1438 ft.

Sloan & Zook's Scott-Fay farm, Bolivar, 6 bbls, Waugh-Porter, 1460 ft.

F. J. Wilson's Cass farm, Wirt, 7 bbls, Richburg, 1344 ft.

NEW YORK INTAKE WELLS

Allegany County: New York Oil Co.'s Gadsby farm, Bolivar, Waugh-Porter, 1460 ft.

Sloan & Zook's Welch farm, Bolivar, Richburg, 1518 ft.

Messer Oil Corp.'s "M." Allen farm, Alma, Richburg, 1380 ft.

Bradley Prod. Corp.'s Duke farm, Alma, Richburg, 1644 ft.

L. H. Thornton et al's Fassett farm, Willing, Fords Brook, 1240 ft.

H. W. Patterson et al's Black farm, Scio, Scio, 870 ft.

H. W. Patterson et al's Black farm, Scio, Scio, 862 ft.

OKLAHOMA

Caddo County—Cement: Ohio's Wagner Acc. 2-15, w½ sw sw 12-5n-9w, sand 3305-46 ft, pump 170 bbls oil, 35 wtr, 3370 ft.

Creek County—Keystone District: Black Jack's (C. O. Buckler) Isles 2, nw ne se 1-19n-9e, Redfork 2059 ft, shot 100 qts 2059-87 ft, pump 5 bbls, 2090 ft.

Marshall County—Cumberland: Pure's Rowland 1, se ne ne 19-5s-7e, McLish 5568 ft, flow 1200 bbls, 6063 ft.

Noble County—Liberty: Magnolia's Veronneau 1, se ne nw 10-22n-2e, 2nd Wx 4438 ft, abnd 4457 ft.

Oklahoma County — NE Edmond: Harper-Turner's Harper 14, c nw nw 17-14n-2w, Bartles 5874-76 ft, flow 45 bbls, 5906 ft.

Okmulgee County—Tiger Flats: M. W. Lee's Bean 1, ne ne nw 14-12n-12e, Dutcher 2218-23 ft, pb to 1250 ft, abnd 2253 ft.

Okmulgee County—Hamilton Switch: J. R.

Allen's Berryhill 2, c se sw 6-15n-12e, Booch 1410-1655 ft, abnd 1704 ft.

Okmulgee County — Natura: Conoquenessing's Jones 1-A, c se nw 6-15n-13e, sand 1201-28 ft, 1 mcfg, 1278 ft.

Osage County—W. Boston: A. G. Oliphant's (Osage) 4, ne sw sw 34-22n-7e, Arb 3103 ft, abnd 3103 ft.

Sequoyah County—Unnamed: Western Okla. Gas' Nix Unit 1, nw ne sw 1-10n-24e, sand 1430-1560 ft, 3 mcfg, 1560 ft.

Stephens County—Velma: Skelly's Frensley C-1, sw ne sw 25-1s-5w, sand 1330-1470 ft, pump 75 bbls, 1495 ft.

Stephens County—West Loco: J. E. Jackson's Massey B-1, sw nw nw 8-3s-5w, sand 1100-20 ft, pump 36 bbls, 1120 ft.

Tulsa County—Owasso: Continental's Key 5, sw ne nw 9-21n-13e, Tucker 1279-1301 ft, re-pressure well, 1302 ft.

OKLAHOMA WILDCATS

Atoka County — Failure: Burns Oil Co.'s Kinch 1-A, nw sw se 18-3s-10e, Wapa 1240 ft, Crom 1392-1402 ft, Miss Caney 1712 ft, Mayes 2110 ft, Wood 2280 ft, Mise 2548 ft, Syl 2550 ft, Viola 2697 ft, McLish zone 3270 ft, McLish 3665 ft, 2nd McLish 3728 ft, abnd 3754 ft.

Hughes County—Failure: S. W. Collins' Jenkins 1, se nw sw 14-7n-9e, abnd 1297 ft.

Jefferson County—Failure: Benson Bros.' Trout 1, ne nw sw 10-7s-6w, sand 910-20 ft and 1010-20 ft, wtr sand 1565-1572 ft, abnd 1625 ft.

Kay County—Failure: Alco Valve Co.'s Hajek 1, nw nw se 26-26n-1e, Lay 3015-3105 ft, abnd 3122 ft.

Lincoln County — Failure: Herndon Drlg. Co.'s Terney 1, ne ne nw 30-12n-6e, Hogs 2030 ft, Lay 2125 ft, Ceb 2385 ft, Osw 3270 ft, Prue 3374 ft, Bart 3832 ft, lime 3950 ft, Caney 4080 ft, abnd 4202 ft.

Pawnee County—Failure: Riverland Oil Co.'s Chief 1, sw nw nw 30-22n-4e, Osw 3200 ft, Miss 3756 ft, 2nd Wx 4103-23 ft, abnd 4133 ft.

Pottawatomie County—Failure: Mid-Continent et al's Bullock 1, ne ne se 7-11n-6e, Avant 1520 ft, Belle City 1620 ft, Hogs 1950 ft, Ceb 2290 ft, Osw 3088 ft, Prue 3093-3103 ft and 3130-3232 ft, abnd 3717 ft.

Seminole County — New Field: Thompson Bros.' Fleet-Osborn 1, c sw ne 12-5n-6e, shale and lime 1760-80 ft, broken sand 1780-1800 ft, 50 bbls, 1808½ ft.

Seminole County—Failure: Harry Diamond, Inc.'s Scott 1, se se sw 2-6n-5e, Belle City 1015 ft, Calvin 2411 ft, sand 2511-20 ft, abnd 3165 ft.

OHIO

Ashland County: Frank Lyons' Moore 4, abnd 2935 ft.

Ohio Fuel's Kopp 1, abnd 3019 ft.

Coshocton County: Allen Willey et al's Lake 1, 60 bbls, 3321 ft.

Ohio Fuel's Smailes 1, 172,000 gas, 3418 ft.

Knox County: James A. Upham's Strausbaugh 1, 476,000 gas, 2753 ft.

Medina County: Ohio Fuel's Edwards 1, 386,000 gas, 3546 ft.

Monroe County: Bauman et al's Bauman 2, 44,192 gas, 2012 ft.

C. D. Uhl et al's Dillon 3, abnd 1654 ft.

Noble County: H. G. Clymer's Dimmerling 2, abnd 1640 ft.

J. T. Watson's Groves 1, 37,000 gas, 1650 ft.

Seneca County: W. H. Morrow's Hostler 1, abnd 1557 ft.

Stark County: Belden et al's Barber 3, 2,494,000 gas, 4861 ft.

Wayne County: Hanley & Bird's Ramseyer 1, 500,000 gas, 3686 ft.

Ohio Fuel's Wilson 1, 1,800,000 gas, 2991 ft.

Hanley & Bird's Pontius 1, 87,000 gas, 3769 ft.

PENNSYLVANIA

Greene County: Mfgrs. Light & Heat Co.'s Gainer 5, 1,200,000 gas, 2773 ft.

Carnegie Nat. Gas Co.'s Brock 1, 15 bbls, 3200 ft.

Westmoreland County: Peoples' Nat. Gas Co.'s George 1, 22,000 gas, 4351 ft.

Peoples' Nat. Gas Co.'s Garmarlengo 1, 77,000 gas, 3228 ft.

NORTH TEXAS

Archer County—Scotland: Shell's Coleman 6-C, 330 ft out nec of w 307-ac tr, H. S. Smith sur, flow 528 bbls, 14/64-in, acid 2000 gals, Bend 5043-68 ft, td 5083 ft.

Archer County: Fish Bros.' Fish 1, 930 ft from s and 450 ft from e lines blk 84, J. W. Harris sur, abnd 1413 ft.

Producers Development Co.'s Roach 19, 1350 ft from n and 1650 ft from w lines TE&L 1595, abnd 1280 ft.

Glover-Criswell-Nunneley's Richardson 2, 1650 ft from n and 1281 ft from e lines lot 1, MEP&P sur, abnd 1262 ft.

Clay County: Fortex Oil Corp.'s Dallas Bank-Texaco 2, 1650 ft from ne and se lines of n 440-ac sec 35, Jane Duncan sur, pump 27 bbls, sand 1134-39 ft.

Johnson-Kouri and Morgan's Cheeves 3, 450 ft from nw and 330 ft from w lines of 160-ac tr, blk 55, Bacon subdiv, abnd 1149 ft.

Clay County—Antelope: Shell's Henderson 1, 330 ft out nwc TE&L 2624, pump 54 bbls, shot 4 qts, Strawn 3187-96 ft, td 3197 ft.

Clay County—Watson: J. A. Chapman et al's Newton 2, 425 ft from n and 2751 ft from e lines R. P. Cobb sur, flow 269 bbls, 12/64-in, acid 4000 gals, Bend 5488-5501 ft, td 5511 ft.

Roy Lee, tr's Watson 3-A, 660 ft from n and 5900 ft from e lines W. A. Farris sur, Bend 5232 ft, abnd 6023 ft.

Whitaker Oil Co.'s Newton 4, 467 ft from n and 611 ft from e lines TE&L 2673, Bend 5245 ft, flow 94 bbls, 12/64-in, acid 5502-17 ft, td 5518 ft.

Cooke County—Walnut Bend: Sinclair Prairie's Winger 1, 330 ft out nwc sec 70, Fannin CSL, Simpson 5537 ft, flow 882 bbls, 2-in, natural, Basal Strawn perf 5495-5535 ft, td 5550 ft.

Jack County: Hanlon & Buchanan's Stinehouse 1, 330 ft from s and 1650 ft from w lines 168.9-ac tr, SA&MG A-589, abnd 2393 ft.

Montague County — Bowers: Burk Royalty Co.'s Martin 2, 330 ft out nwc C. A. Barnes sur, flow 696 bbls, ⅛-in, natural, 3500-15 ft.

Young County: B. C. Gilmore et al's Holley 1, L. W. Ross sur A-1352, pump 4 bbls, sand 522-29 ft.

Chas. B. King et al's Brown 5, 3375 ft from w and 5100 ft from n lines of S. Tynes sur, pump 9 bbls, sand 534-47 ft, td 549 ft.

NORTH TEXAS WILDCATS

Jack County—Failure: Chas. H. Kadane et al's Carter-Shell 1, 28 ft from n and 330 ft from w lines TE&L sec 3311, abnd 342 ft.

Wichita County—Failure: Staley Oil Co.'s Moeller 1, 330 ft from s and 990 ft from e lines blk 290, Waggoner Colony subdiv, abnd 2053 ft.

TEXAS PANHANDLE

Carson County: Cities Service's Burnett 51-A, 2475 ft out nec I&GN 58, blk 4, 3,500,000 gas, 251 lbs rp, acid 11,000 gals 2399-2755 ft.

Cities Service's Burnett 52-A, c I&GN 75, blk 4, 9,000,000 gas, acid 4500 gals 2305-2623 ft, td 2650 ft.

Gray County: Phillips' Boone 1, se se nw H&GN 186, blk B-2, 7,900,000 gas, 399 lbs rp, shot 350 qts 2743-2840 ft, td 2860 ft, pb to 2860 ft.

Hutchinson County: J. E. Crosbie, Inc.'s Pitts 52, 330 ft from n and 4994 ft from m/e/e lines TC 9, blk M-21, pump 150 bbls, shot 460 qts 2725-2825 ft.

Moore County: Phillips' Gober 1, c sec 10, blk 1, J. Poitevent sur, 80,000,000 gas, 333 lbs rp, acid 5000 gals 2590-2818 ft, td 2960 ft, pb to 2818 ft.

TEXAS PANHANDLE WELLS DEEPENED

Gray County: Gulf's Coombs et al 1, se se se I&GN 38, blk 3, otd 2887 ft, pump 65 bbls oil, 4 bbls water, 2895 ft.

Gulf's Worley et al 9-A, sw ne sw I&GN 36, blk 3, otd 2965 ft, pump 84 bbls, 2983 ft.

EAST TEXAS

Smith County—Chapel Hill: Chapel Hill Gas System's Mobley 1, 1900 ft from s and 660 ft from w lines 143-ac lse, F. Ariola sur, Pettit 8050 ft, Travis Peak 8294 ft, flow 84 bbls 43-gr, ⅛-in, acid 8176-8202 ft, td 8310 ft.

Wood County—Hawkins: Humble's Bryan 9-B, 467 ft from s and 1423 ft from e lines 202.98-ac tr, M. A. Esparcia sur, flow 287 bbls, ¼-in, Woodbine perf 4832-48 ft, td 4903 ft.

EAST TEXAS WILDCAT

Rains County—Failure: H. L. Hunt Oil Co.'s Sparks 1, 613 ft from s and 263 ft from w lines 53½-ac tr, Wm. Rice sur, elev 541 ft, Pecan 2627 ft, Austin 3170-3510 ft, Woodbine 4060 ft, Georgetown 4807 ft, Goodland 5780-5810 ft, Paluxy 5850-6139 ft, abnd 6214 ft.

WEST TEXAS

Andrews County—Embar-Ellenburger: Phillips' University-Andrews 30, c sw ne sec 30, blk 10, elev 3254 ft, Clear Fork 5420 ft, Ellenburger 7725 ft, flow 375 bbls, 2-in, natural, perf 7930-48 ft, td 7955 ft.

Phillips' University-Andrews 33, c nw ne sec 31, blk 10, elev 3239 ft, Ellen 7710 ft, flow 1744 bbls, ½-in, acid 500 gals, perf 7875-7905 and 7913-23 ft, td 7957 ft.

Andrews County — West Fuhrman: N. G. Penrose's University-Cities Service 3, 614 ft from n and 2033 ft from e lines sec 3, blk 10, flow 132 bbls 20/64-in, natural, lime 4440-4616 ft.

Cochran County — Slaughter: Devonian et al's Duggan 15-A, 560 ft out nec lab 8, leag 55, Oldham CSL, flow 784 bbls, cas, acid 12,000 gals, 4980-5027 ft.

Jerry Hawkins et al's Mallet 7-A, 580 ft out nwc lab 24, leag 47, Edwards CSL, flow 842 bbls, cas, acid 11,500 gals, 4913-58 ft.

Crane County—McKee: Magnolia's Tucker 1, 660 ft ne and nw of e corner sec 20, but in H&TC 19, blk 3, elev 2452 ft, base Permian 5325 ft, base detrital 5370 ft, top Tulip 5915 ft, McKee 6210 ft, Ellen 6950 ft, abnd 7204 ft.

Ector County—North Cowden: Stanolind's Midland Farms 5-D, 700 ft from w and 985 ft from n lines sec 45, blk 42, T-1-N, pump 219 bbls oil, 55 bbls water, shot 445 qts 4692-4840 ft, td 4968 ft, pb to 4851 ft.

Hockley County—Slaughter: Jerry Hawkins et al's Mallet 9-A, 580 ft out sec lab 24, leag 47, Edwards CSL, flow 914 bbls, cas, acid 11,500 gals, 4924-71 ft.

Magnolia's Mallet 18-D, 580 ft out sec lab 9, leag 49, Edwards CSL, flow 1285 bbls, cas, acid 10,500 gals, 4900-4995 ft.

Pecos County—Walker: Cardinal Oil Co.'s University 1-D, 998 ft from s and 330 ft from e lines sec 24, blk 16, flow 44 bbls oil, 12 water, 1-in, shot 80 qts 2116-36 ft.

J. D. Lancaster et al's University 1-G, c sw se sec 12, blk 16, elev 2908 ft, abnd 2220 ft.

Reagan County—Barnhart: Sharples Corp.'s University-Humble 1, c nw sw sec 3, blk 48, elev 2771 ft, Ellen 8995 ft, flow 1713 bbls, ½-in, acid 1000 gals, 9060-9163 ft.

Ward County:—Magnolia-Sealy South: Atlantic and Standard of Texas' University 2-B-12, c se sw sec 12, blk 16, flow 327 bbls oil, 40 water, ¼-in, natural, lime 2908-12 ft.

Ward County—Pecos Valley: Jamison & Pollard's Texas Cotton Ind. 4-B, 1650 ft from ne and 330 ft from se lines H&TC 35, blk 1, flow 36 bbls, 12/64-in, shot 40 qts 1891-1901 ft, td 1917 ft.

Ward County—Spencer: Stanolind's Spencer 1-C, 664 ft from ne and 1994 ft from se lines H&TC 53, blk 34, elev 2632 ft, top Yates 2715 ft, abnd 3000 ft.

WEST TEXAS WILDCATS

Mitchell County—Failure: W. M. Fentress et al's Wulfjen 1, c nw sw H&TC 5, blk 13, elev 2163 ft, abnd 2465 ft.

Scurry County—Failure: Humble's Newman 1, 1740 ft from s and 2246 ft from w lines H&TC 258, blk 97, elev 2501 ft, chert-detrital contact 8168 ft, Ellenburger 8175 ft, junked 8336 ft.

WEST CENTRAL TEXAS

Jones County: Danciger O&R, Inc.'s Cannon 2, 330 ft out nec w 35.6-ac of s 75.7-ac tr, blk 81, Godwin subdiv, leag 126, elev 1791 ft, abnd 2731 ft.

Lewis Prod. Co.'s Hall 1, 330 ft from w and 2850 ft from s lines T&P 1, blk 17, elev 1676 ft, abnd 2287 ft.

Palo Pinto County: T.P. Coal & Oil Co.'s Fee-Ryan 1, 1320 ft from n and 1500 ft from e lines Isaac Ryan sur A-388, abnd 3066 ft.

WEST CENTRAL TEXAS WILDCAT

Brown County: Jessie Briggs et al's Porter 1, 660 ft out swc lot 25, G. Brunson sur 66, abnd 1362 ft.

Stephens County—Discovery: Daniel Production Co.'s Pratt 1, 933 ft out sec TE&L 1294, elev 1161 ft, Bend 3285 ft, pump 35 bbls oil, 50 water, acid 500 gals 3285-95 ft.

TEXAS GULF COAST

Brazoria County—Danbury: Humble's Blakely 3-B, 413 ft fr swl, 990 ft fr nwl H&TB 14, 61-ac tr, 5½-in 5714 ft, perf, flow 159 bbls, ⅛-in, td 5999 ft.

Jefferson County—Lovell Lake: Humble's Broussard 41, 3396 ft s alg el of ne cor thence 3804 ft w at ra on 1652-ac tr, C. Hillebrandt sur, sand 7706 ft, 5½-in 7706 ft, perf, flow 151 bbls, ⅛-in, td 7717 ft.

San Jacinto County—Mercy: Shell's Central Coal 6, 2105 ft fr nw'ly line of J. Robinson sur A-45, sand 8254 ft, 5½-in 8258 ft, flow 154 bbls, ⅛-in, td 8282 ft.

TEXAS GULF COAST WILDCAT

Wharton County—Failure: Skelly's Steves 1, 1 mi se Louise townsite, 1279-ac tr, J. J. Dillard sur, A-18, abnd 6665 ft.

LOWER TEXAS COAST

DeWitt County—Yorktown: Adams Oil & Gas Co.'s Pieper 1, 1100 ft fr nwl, 660 ft fr nel of 103-ac tr, H. C. Woods sur, A-482, 7-in, 7270 ft, perf 7185-7200 ft, flow 320 bbls dist, 15,000,000 gas, ¾-in, td 9100 ft.

Jackson County—West Mauritz: Barnsdall's Westhoff 1, 522 ft fr n&sl, 467 ft fr el n 40-ac of s 80-ac of 282-ac tr, M. L. York sur A-312, 7-in 5477 ft, perf 5470-76 ft, 126 bbls, 7/64-in, td 5477 ft.

Jackson County—Maubro: Humble's Strauss 10, 1850 ft fr el, 1200 ft fr swl 530-ac tr, 5½-in 5212 ft, sand 5222 ft, flow 86 bbls, ⅛-in, td 5227 ft.

Jackson County — North LaWard: Stanolind's Bonnot 2, 543 ft fr w'ly wl, 777 ft fr n'ly sl of A. M. Clare sur, 5½-in 5227 ft, sand 5205 ft, perf 5204-16 ft, 48 bbls, 5/32-in, td 5227 ft.

Jim Wells County—Seeligson: Shell's Seeligson 19, 689 ft fr w'ly wl, 632 ft fr nl of 990-ac tr, Willis Millican sur 335, A-291, 4½-in 6032 ft, perf 5928-48 ft, 153 bbls, 7/64-in, td 6034 ft.

Sun's Canales 15, 660 ft fr n&el's W. L. Dickson sur 180, A-127, 7-in 6094 ft, perf 6046-50 ft, flow 133 bbls, 7/64-in, td 6103 ft.

Kleberg County—Seeligson: Humble's King Ranch-Cabeza 11, 660 ft fr wl, 2478 ft fr sl of A. G. King (GH&H) 50, 5½-in 5970 ft, sand 5974 ft, flow 153 bbls, ⅛-in, td 6002 ft.

Jim Wells County—Armagosa: Smith & Story's McGill 4, 660 ft fr n&wl's 371-ac tr, N. Gussett sur 98, A-185, 5½-in 2375 ft, perf 2293-2900 ft, 8,500,000 gas open flow, td 2375 ft.

San Patricio County—Midway (Deep): Central Oil Co.'s Scrivener 2, 467 ft fr nw and nel's 100-ac lse, Coleman-Fulton Pasture subdvn, sand 6063 ft, 5½-in 6120 ft, perf 6068-72 ft, 187 bbls, 5/32-in, td 6123 ft.

San Patricio County — Odem: Seaboard's Welder 5-C, 1320 ft fr wl, 1000 ft fr sel of 160-ac portion of 2010-ac lse, Juan Hart &

Sons Gr. A-10, sand 5362 ft, 5½-in 5400 ft, perf 5365-75 ft, flow 112 bbls, ⅛-in, td 5477 ft.

LOWER TEXAS COAST WILDCATS

Jackson County—Failure: H. Merlyn Christie's Gurinsky 1, 692 ft fr ne and swl's and 660 ft fr nwl of ne 76-ac tr of sw 233-ac tr of se 313-ac tr, sec 16, C. W. Hahl subdvn, Ramon Musquez gr, A-59, abnd 6059 ft.

Jim Wells County—Failure: Kirkwood & Morgan's Cummins 1, 660 ft fr nl, 467 ft fr el of blk 5 Adams-Staples subdvn, Jose Pacheo sur, abnd 5865 ft.

Nueces County—Failure: Phillips' Mastin 2, 1980 ft fr n&el's Dolores I&A Co. sur, A-588, abnd 8508 ft.

SOUTHWEST TEXAS

Duval County — Cadena: Taylor Refining Co.'s Garcia 1, 660 ft fr el, 662 ft fr sl Calletano Rios sur 306, 5½-in 6480 ft, perf 4564-68 ft, jetted 22 bbls, ¼-in, td 6521 ft, opens Hockley sand.

Jim Hogg County—Colorado: Sun's East 6-B, 841 ft fr nl, 330 ft fr el 376-ac tr, sand 3027 ft, 5½-in 3024 ft, 88 bbls on pump, ¾-in, td 3034 ft.

LaSalle County — Washburn: Quintana's South Texas Syndicate 17, 8080 ft e of w'ly wl, 7250 ft n-ne fr inner cor 15,000-ac lse, A. J. Dill sur 94, abnd 5705 ft.

Starr County—Rincon: Continental's Garcia 2-D, 992 ft fr nl, 1626 ft fr el of W. D. Stephenson sur 907, 1070-ac lse, 6-in 3980 ft, perf 3928-38 ft, 235 bbls, 3/16-in, td 4500 ft.

Humble's San Antonio Loan & Trust 7, 2140 ft fr el, 660 ft fr swl of J. A. Robinson sur 504, 644-ac lse, abnd 4130 ft.

Starr County—Frost: Sun's Garcia Land & Livestock 1-C, 660 ft n, thence 660 ft e parallel with lse lines fr se cor Sun's Orive 175-ac lse, porcion 97, Y. Trevino sur, 5½-in 5074 ft, perf 5004-08 ft, 24 bbls, 7/64-in, td 5409 ft, opens new sand in Vicksburg.

Starr County—North Sun: Sun's Laurel 2, 525 ft fr e'ly wl, 1800 ft fr s'ly nl of 401-ac tr, La Sal Colorado gr, 5½-in 4545 ft, sand 4518 ft, perf 4535-39 ft, 153 bbls, 9/64-in, td 4551 ft.

SOUTHWEST TEXAS WILDCATS

McMullen County—Failures: J. W. Gorman's Whitley 1, Loma Alto area, 160-ac tr, sur 128, A-1142, abnd 2051 ft.

Hickok & Reynolds' Shiner Ranch 1, 5 mi sw Ezzell field, Humble farmout, se sec 27, abnd 1795 ft.

Highland Oil Co.'s Cousins 1, 360-ac tr, BS&F 100, 1½ mi ne Loma Alto field, abnd 2971 ft.

Edwin M. Jones' Ezzell 1-C, ne sec 44, 2 mi se Ezzell field, abnd 2606 ft.

Starr County—Failure: Baldridge & King's Saenz 1, 2 mi sw Sun field, 237-ac lse, W. M. Pierce sur 919, abnd 5007 ft.

Webb County—Failure: H. H. Weinert and A. B. Buchanan's Guerra 1, 2 mi w Kohler field, 80-ac lse, sur 146, A-1583, abnd 2772 ft.

SOUTH CENTRAL TEXAS WILDCATS

Guadalupe County—Failure: H. H. Weinert and A. B. Buchanan's Gieseck 1, 105-ac lse, Green DeWitt sur 13, 12 mi s of Seguin, abnd 3381 ft.

Kerr County—Failure: Continental's Schreiner 1, 3298-ac lse, sw CCSD&RGNG 1597, abnd 5820 ft.

WEST VIRGINIA

Calhoun County: Godfrey L. Cabot's Bell 1, 100,000 gas, 1884 ft.

So. Penn Nat. Gas Co.'s Sharp 11, 12 bbls, 2203 ft.

Gilmer County: Pitts. & W. Va. Gas Co.'s Lynch 7886, 214,000 gas, 1939 ft.

Pitts. & W. Va. Gas Co.'s Moore 7857, 54,760 gas, 2008 ft.

Carnegie Nat. Gas Co.'s Wright 1, 41,000 gas, 1784 ft.

Jackson County: W. Va. Gas Corp.'s Simmons 1, 2,659,000 gas, 5240 ft.

Marshall County: Mfgrs. Light & Heat Co.'s Rulong 3673, 1,071,000 gas, 2145 ft.

Ritchie County: W. H. & L. E. Mossor's Newlon 1, 249,000 gas, 1978 ft.

WEST VIRGINIA WELLS DRILLED DEEPER

Kanawha County: Falling Rock Producing Co.'s Fee 87, 300,000 gas, 1892 ft.

Ritchie County: Pittsburgh Oil & Gas Co.'s Lemon 3, 239,000 gas, 1912 ft.

United States Wildcat Starts

CALIFORNIA

Kern County: General Petroleum Corp.'s Railroad 1, 23-28-28, Round Mountain area, grading.

Los Angeles County: Texas Co.'s McNally A-3, 22-3-11, La Mirada area, foundation.

ILLINOIS

Clark County: W. H. Wright's Hight 1, c w½ nw ne 32-9n-14w, lcn.

Cumberland County: Ohio's C. I. Spencer Comm. 1, se se sw 4-9n-7e, lcn.

Edwards County: Stanolind's A. Reid 1, se sw nw 16-1s-10e, lcn.

Franklin County: Lario's J. W. Dillon 1, nw nw nw 5-7s-4e, lcn.

Madison County: L. Alch's Gusewelle 1, se ne ne 33-4n-7w, lcn.

Wayne County: Gulf's Vest 1, sw nw se 18-1n-5e, lcn.

INDIANA

Bartholomew County: Jas. C. Hamilton's Rich 1, ne nw sw 25-8n-4e, lcn.

KANSAS

Barton County: Bay Petroleum Co. et al's Bates 1, se se ne 35-18s-13w, surface hole.

Bartlett & Crum et al's Schartz 1, nw nw ne 34-19s-12w, lcn.

Osborne County: Carter's Neuschwanger 1, c ne sw 15-8s-14w, lcn.

Reno County: Midstates Oil Co.'s Nies 1, nw nw sw 15-25s-10w, rur.

Stafford County: W. F. Faulkner and Atlantic's Rothgarn 1, c e½ sw se 10-21s-13w, lcn.

KENTUCKY

Henderson County: Basin Drlg. Co.'s Ed Willett 1, 16-P-21, lcn.

Cherry & Kidd's J. L. Dorsey 1, 18-Q-21, lcn.

SOUTH LOUISIANA

St. Mary Parish: Arkansas Fuel Oil Co.'s Shadyside 1, e Bayou Sale field, 2907 ft sw'ly alg nw'ly line of sec 63 fr se cor sec 5, thence 745 ft at ra in 5-15s-10e, lcn 12,000-ft test.

West Baton Rouge Parish: Amerada's Nelson 1, Beaulieu area, fr most n'ly nw cor sec 97, go e alg nel of sec for 5500 ft, thence sw at ra in 97-7s-12w, lcn.

MICHIGAN

Midland County: Smith Petroleum Co.'s Morris 1, n½ ne sw 1-14n-1e, rig.

Clare County: Leonard & Rowmor's Throop 1, s½ ne ne 11-20n-6w, dr.

OKLAHOMA

Garvin County: Barr & McCracken's Hart 1, c nw sw sw 25-1n-3w, rur, 50 ft.

Pittsburg County: M. M. Schene's Schudel 1, sw sw ne 1-6n-15e, Hartshorne sand 1900 ft, dr 2204 ft.

NORTH TEXAS

Archer County: Ray Dawson et al's Abercrombie 1, 450 ft from e and 972 ft from s lines w½ blk 152, Harris Club Ranch, lcn 1300-ft test.

G. E. Kadane & Sons' Ferguson 1, 330 ft out sec SP 1, A-417, lcn 4550-ft test.

Clay County: Perry Browning et al's Browning 1, 860 ft out sec blk 52, Byers subdiv, lcn 2000-ft test.

WEST TEXAS

Borden County: Cosden Pet. Corp.'s I. A. Smith 1, c se sw H&TC 57, blk 25, lcn 4000-ft test.

Howard County: W. S. Guthrie et al's P. Allen 1, c se se Lavaca Navigation Co., sec 57, blk 20, lcn 4500-ft test.

Pecos County: Brown-Hancock Oil Co.'s D. W. McKay 1, 660 ft from n and 3300 ft from e lines I&GN 32, blk 1, lcn 2500-ft test.

Ungren-Frazier et al's J. L. Nutt-Phillips 1, c se ne T&St.L. sec 17, blk 125, lcn 2600-ft test.

WEST CENTRAL TEXAS

Jones County: Fain-McGaha et al's J. L. Patterson Unit 1, 330 ft out nwc e½ T&P 20, blk 17, lcn 2800-ft test.

TEXAS GULF COAST

Jefferson County: H. F. Baker's Grossie et al 1, 2 mi n Groves townsite, 70-ac pooled unit, Joseph Grigsby Lge, lcn 10,000-ft test.

SOUTHWEST TEXAS

Duval County: Henderson Coquat's Lopez 1-B, 120-ac tr, J. Poitevent sur 455, lcn 1800-ft test.

Webb County: Dulup Oil Co.'s Puig Bros. 3, Aviators area, 80-ac lse, Albercas de Arriba gr, lcn 2000-ft test.

Humble's Benavides 1, Pescadito area, 17 mi ne Laredo, 640-ac lse, J. Benavides sur 2008, lcn 7000-ft Wilcox-Midway test.

LOWER TEXAS COAST

Bee County: Bridwell Oil Co.'s Ray 1, Beeville area, 660 ft fr nwl, 11,550 ft fr nel of Anne Burke sur, A-5, dr.

Bee County: Stanolind's Shawe 1, Berclair area, 330 ft fr s&wl of blk 31, C. B. Lucas subdvn, William Ryan sur, A-244, dr.

Jackson County: Butcher-Arthur Co.'s Caswell 1, 660 ft fr n&wl 396-ac tr, H. W. Munson sur, lcn 6700-ft test.

Karnes County: Blanco Oil Co. and Al Buchanan's Nichols 1, Green area, 660 ft fr se & swl 147-ac tr, Carlos Martinez sur, lcn 7200-ft test.

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Men in the Industry's News

GLENN BISH has been made general manager of the Michigan division of The Ohio Oil Company, succeeding Harry Moran, who retired as of December 1, 1942.

Bish, who entered the company's service in May, 1923, was transferred to Michigan as assistant manager of the division in December, 1942, from Houston. He had been in the company's Texas, New Mexico, Louisiana, and Wyoming districts for 19 years prior to his transfer.

Bish's father, J. N. Bish, retired, had a record of 48 years of service with the company. He is living in Shreveport, Louisiana.

Moran, now 79, retired after 49 years of continuous service with The Ohio Oil Company. For several years he had been in charge of the company's producing divisions in Ohio and adjacent areas. He was made general manager of the Michigan and Ohio division when it was created in 1940, and subsequently directed the company's first large operations in Michigan starting in 1941. Since that time Michigan has been made a separate division apart from the Ohio area, with headquarters at Mt. Pleasant.

JOHN R. MORAN has been named counsel and vice president of Manning and Brown, Inc., Rocky Mountain drilling contractors with headquarters at Denver, Fred M. Manning, president, has announced. In accepting the position with Manning and Brown, Moran resigned from the legal department of Continental Oil Company at Houston, and prior to that, from 1931 through 1938, was attorney for the Rocky Mountain division of Continental at Denver.

Moran has had wide experience in the oil business. During the summer months from the years 1917 through 1925, when he was attending college, he worked in several branches of the oil industry. In 1925 he was graduated from Notre Dame University with a law degree. From 1926 through 1929 he was attorney for Shell Oil Company and 1930 through 1931 he was a junior partner in the law firm of Hayes and Richardson of Oklahoma City.

C. STEWART NOLAND, geological scout for Skelly Oil Company in the Permian Basin with headquarters at Midland, Texas, has been assigned to straight geological duties. He holds a B. S. degree in geology from the University of Oklahoma, and has been with the company five years.

G. W. PATCHETT has resigned as staff assistant of Mid-Continent Oil and Gas Association, Tulsa, to accept a post in the income tax department of Stanolind Oil & Gas Company.

E. M. DOYLE, JR., production department of British-American Oil Producing Company, Oklahoma City, has resigned to accept a place with Douglas Aircraft of the same city.

G. F. OLSEN, SR., of Los Angeles, has been elected a member of the board of directors of General Petroleum Corporation. A graduate of Purdue University with degrees in electrical engineering and chemistry, he joined the company in 1925 as a consultant in the manufacture of lubricating oils. In May, 1932, he became manager of the company's laboratories. Previous to his present affiliation he successively served Indian Refining Company, as manager of refining; Union Oil Company, as superintendent of refining; and from 1918 to 1925 was engaged in private practice as consultant, with offices in Boston and New York. During this period, he was consultant for the U. S. Navy in the refinery at Fall River, Mass., under the supervision of Franklin D. Roosevelt, then under secretary of the Navy. At that time he also served as consultant for Secretary of States Hughes and the American Petroleum Institute. He is active on committees of the API and ASTM.

Olsen's son, Fred, a General Petroleum Corporation engineer, on leave, is in Washington as a director of civilian training for the War Department.

EARL M. STILLEY, consulting geologist, has been elected president of North Texas Geological Society. Clinton Engstrand of Shell Oil Company has been named vice president while Dan Heninger of Ohio Oil Company was elected secretary-treasurer.

WALTER G. L. SMITH, president of Grizzly Manufacturing Company of Los Angeles, California, is on an extended business trip to Washington and various

You may have surplus equipment that is urgently needed by some other operator. See the

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TRADING POST SECTION

Page 53 of this Issue

eastern manufacturing centers, in connectio with the company's increased activities in the production of rubber products for aviation and industrial purposes. Smith expects to spend several weeks in the eastern territory and at the company's new manufacturing plant in Paulding, Ohio; stopping for brief visits at their Mid-Continent and Gulf Coast branches on the return trip.

E. E. HAUBEGGER has been appointed district sales manager for Republic Steel Corporation in Houston, N. J. Clarke, vice president in charge of sales, has announced. Prior to joining the Houston sales force in 1936, Haubegger was for seven years assistant district sales manager for Republic Supply Company in the same city. He became assistant district manager for Republic Steel in 1940.

Haubegger succeeds Gordon F. Hess who was recently named district sales manager for Republic in Detroit. Prior to going to Houston Hess was assistant manager of sales of Republic's Alloy Steel Division. He entered the steel business in 1917 in the metallurgical department of Central Steel Company which later became a part of Central Alloy and in 1930 was incorporated into Republic.

FRED W. BATES, consulting geologist of Lafayette, Louisiana, presented a paper on "The Anse la Butte Dome" before the Houston Geological Society January 21. Jay B. Wharton, Jr., collaborated with Bates in writing the paper.

HENRY W. BOGGESS, Sinclair Prairie Oil Company, Tulsa, addressed the Engineers Club of Tulsa on safety engineering January 18.

DAVE HAWTHORN, petroleum engineer on leave from Amerada Petroleum Corporation, Tulsa, has been appointed chief of the materials and equipment section of PAW.

H. K. IHRIG, engineer with Kobe, Inc., addressed the Central Oklahoma production chapter of API, January 19 at Oklahoma City on "Hydraulic Pumping in the Mid-Continent."

OTTO D. DeHART, 59, district sales manager of Pittsburgh-De Moines Steel Company, died January 17 at his Dallas residence after a long illness. He joined the company in 1907, and was placed in charge of the Dallas district office in 1911.

Squeaks from the Bull Wheel

Forewarned

"I hear the hired man left."

"Yes, he said he couldn't stand the cold."

"Why, it's no colder on the farm this year than usual."

"No, but he heard that farm labor was to be frozen this year."

An Old Hand

"The widow and I started up the aisle to the altar, and every light in the church went out."

"What did you do?"

"We kept right on going. The widow knew the way."

Her Turn Now

He was engaging a secretary.

"Chew gum?"

"No, sir."

"Use slang?"

"No, sir."

"Roll your eyes at salesmen?"

"No, sir."

"Know how to spell 'cat'?"

"Yes, sir."

Then she took a hand and began:

"Smoke cheap cigars?"

"Why—er—no."

"Bang things around on your desk when business is bad?"

"N-never."

"Raise the roof when things go bad at home?"

"No, indeed."

"Know enough to appreciate a good secretary when you get one?"

"I—I think so."

"All right, you're accepted. When do you want me to go to work?"

In Full Pursuit

Sally—"What wartime occupation are you pursuing?"

Polly—"Well, right now it's a second lieutenant!"

Democracy at Work

Stepping from a luxurious car, the expensively dressed middle-aged woman haughtily approached the sentry.

"I wish to see my son, Montmorency Montpelier."

"Who?"

"Montmorency Montpelier. He is a tall, handsome, blue-eyed young man, with delicate—"

"Oh, sure, I know who you mean—Hey, Stinkee-ee-ey!"

Leading Question

"You say you have known the defendant all your life. Tell the jury whether you think he would be guilty of stealing this money."

"How much was it?"

Spoken in Jest

A lawyer was defending a man accused of housebreaking, and said to the court:

"Your Honor, I submit that my client did not break into the house at all. He found the parlor window open and merely inserted his right arm and removed a few trifling articles. Now, my client's arm is not himself, and I fail to see how you can punish the whole individual for an offense committed by one of his limbs."

The judge considered this argument for several moments, and then replied:

"That argument is very well put. Following it logically, I sentence the defendant's arm to one year's imprisonment. He can accompany it or not, as he chooses."

The defendant smiled, and with his lawyer's assistance, unscrewed his cork arm, and leaving it in the dock, walked out.

"Every dime and dollar not vitally needed for absolute necessities should go into WAR BONDS and STAMPS to add to the striking power of our armed forces."
—*President Roosevelt*

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Along with increased war production goals go increased costs . . . extra billions which must be raised, and raised fast, to win this war. That means we must raise our sights all along the line, with every firm offering every American with a regular income the chance to buy more *War Bonds.* YOUR help is asked in encouraging employees to put at least 10 percent of their pay into War Bonds every payday, through the Payroll Savings Plan. For details of the Plan, approved by organized labor, write, wire, or phone Treasury Department, Section T, 709 12th St. N. W., Washington, D. C.

U.S. WAR SAVINGS BONDS

This space contributed to America's All-Out War Program by

THE OIL WEEKLY

Notes for the Equipment Buyer and User

Block Assemblies

BAASH-ROSS TOOL COMPANY

Baash-Ross Tool Company, 5512 Boyle Avenue, Los Angeles, has announced development of two unitized block assemblies, bringing a new standard of compactness and adaptability to modern portable rig operations.

These assemblies combine both the block and hook into one compact, streamlined unit, thus saving much valuable space over the separate block-plus-hook arrangement generally used. By decreasing the space required for hook and block, they substantially increase the effective working height of portable rigs. They permit pipe to be brought out of the hole faster, without risk of running into the crown . . . they greatly speed up floor operations by the increased working room they provide . . . and they also increase the safety and convenience of portable rig operations, it is claimed.

These unitized blocks are available in two types, either with spring-loaded hook or with spring-loaded link adapter, to meet a wide range of portable well-pulling and slim-hole-drilling requirements.

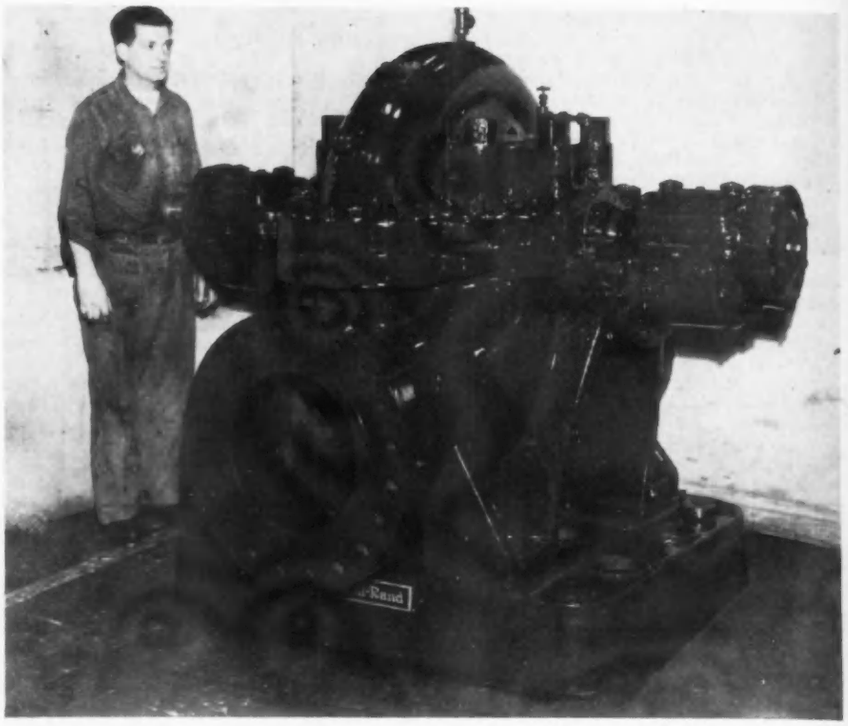
The block with spring-loaded hook is similar to the conventional hook-plus-block assembly, but is far more compact through elimination of the space normally required for block and hook bails. The hook is free-swiveling, but when desired can be quickly locked in any one of four positions by means of a built-in locking pin.

An automatic latch is provided for locking the hook in closed position, an important safety feature in rough drilling operations, and when open, this latch also acts as a guide for picking up the swivel bail.

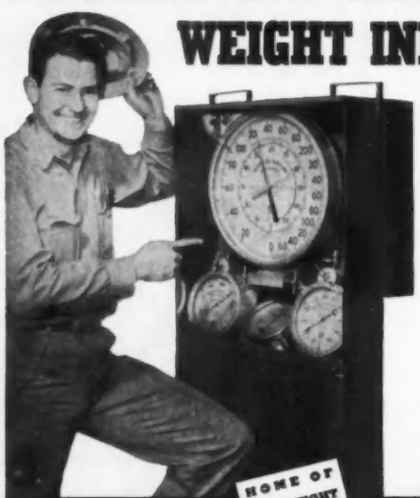
Where maximum compactness is desired, the link-adapter assembly is recommended by the manufacturer. With this assembly the elevator links are supported on ears provided on the side of the link adapter body and are locked in place by bolts. This unit, like the hook unit, is spring-loaded and free swivelling, and can be locked against rotation in any one of four positions by means of a built-in locking pin. It is available with or without a bottom clevis bail for handling rod hooks and similar equipment.

Both block units are completely streamlined with all bolts recessed into the body where they cannot catch on rig projections or clothing. Many other advanced features are incorporated in the design of the unitized block assemblies to increase their convenience, safety and efficiency, it was said.

Each of the two types of unitized block assemblies is available in nine sizes—a range wide enough to meet the requirements of practically any portable rig job. Each type of block is available in one-, two-, or three-sheave models (capacities 30, 60 and 100 tons, respectively) and each of these models is available with 20-, 24- or 30-inch sheaves.



Centrifugal pump built by the Cameron Division of Ingersoll-Rand Company for War Emergency Pipelines, Inc. Each pump will be electric-motor-driven at 1780 rpm and will operate against a total head of 707 feet. Three such pumps will operate in series so as to attain the high head of 770 pounds per square inch required by the operating conditions of the big-inch line, and a number of them are required.



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Union Wire Rope's "E" Award Renewed

Union Wire Rope Corporation's "E" award has been renewed for a period of six months, dating from November 15, 1942, by the Navy Board of Production

Reducing tool joint failures

Information supplied by "Oil Weekly"

Eight *Musts* for extending life and service of tool joints.

1. Tong joints tightly. One wrap of jerk line for each inch of drill-pipe diameter. Hold wraps tightly: let cathead man slip his line.

2. Avoid stabbing and break-out damage. Slowly does it. Swinging impact of thread and box starts wabble and leaky joint failures. Never switch damaged pin to undamaged box.

3. Breaking in new string: tong tight by hand first few round trips, then spin tight. Rapid spinning may gall or freeze new threads.

4. Use *best* thread-joint lubricant. Brush on thin coating, thoroughly covering thread and shoulder. On new strings, redouble care.

5. Check kelly sub threads every opportunity. Damage here affects every joint in string. Check rat hole for clearance when kelly is lowered in it.

6. Reject threads which engage improperly. Do not force such a joint. Washouts, galled threads and breakage result from driving tight a damaged joint.

7. Keep tool joints to outside diameter. When wear exceeds ¼-inch, use new or reconditioned box or protect with wear sub.

8. Carry carefully. Avoid contact of box and pin with adequate protectors. Rack pipe uniformly and carefully to avoid impact of thread against shoulder.

CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS.

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Awards. The renewal grants the company the right to add a white star to its pennant. The award is difficult to win in the first instance and the requirements for renewal are equally exacting.

Bucyrus-Erie Awarded Second Army-Navy "E"

The Army-Navy "E" award was presented to the Erie Works of Bucyrus-Erie Company on January 16. Previously, the company's South Milwaukee plant had received the same distinguished honor for production achievement.

Bucyrus - Erie's regular dirt - moving and material handling equipment is used in a wide variety of activities directly concerned with the war.

General Asbestos & Rubber Gets Army-Navy E Award

General Asbestos & Rubber Division of Raybestos-Manhattan, Inc., North Charleston, South Carolina, has been awarded the Army-Navy E burgee for excellence in production. This was the first Army-Navy swallow-tail to fly over the Carolina low country and the first to be awarded to the asbestos textile industry. Rear Admiral Cluverius presented the award to Executive Vice President Rohrbach, representing the workers.

Harshaw Office Opened

The Harshaw Chemical Company has announced the opening of a Houston office in the Mellie Esperson building under the direction of Thor H. Petersen, manager.

Automatic Control

The Bristol Company, Waterbury, Connecticut, has just published a series of bulletins covering automatic control and recording instruments for industrial furnaces, dryers, kilns, and ovens. These have been bound together in loose leaf form in order that additions and revisions may be easily inserted.

The binder set covers pyrometer recorders and controllers, thermometer recorders and controllers, humidity recorders and controllers, draft controllers, control valves and accessories.

The bulletins included are well illustrated with photographs, application drawings, and wiring diagrams, and the material included gives a wide selection of types and combinations to meet the needs of manufacturer or user.

Welding Accessories

"Arc Welding Accessories for Women" is the title of a new bulletin recently issued by the industrial department of the General Electric Company, Schenectady, New York. The bulletin, which is illustrated throughout, presents General Electric's complete line of safety clothing and equipment especially designed for the country's steadily increasing army of girl welding operators.

V. H. McKIMMEY has been appointed purchasing agent for Texasteel Manufacturing Company at Fort Worth. He is well known in supply circles, having been with Lucy Manufacturing Company in Tulsa and the National Supply Company in Fort Worth for a number of years.

Advertisers' Index

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*Cameron Iron Works, Inc. III Cover
*Cardwell Manufacturing Co. —
*Caterpillar Tractor Co. —
*Chain Belt Co. —
Chase Bag Co. —
*Clark Bros. Co. —
*Climax Engineering Co. —
*Climax Molybdenum Co. 63
*Coffing Hoist Co. —
Columbia Steel Co. —
*Columbian Steel Tank Co. —
*Continental Motors Corp. —
The Continental Oil Co. —
The Continental Supply Co. —
*Fred E. Cooper —
*The Cooper-Bessemer Corp. —
Core Laboratories, Inc. —
W. H. Curtin & Co., Inc. —
O. E. Dempsey Construction Co. —
DeWitt Hotels —
*Dowell Incorporated —
*E. I. du Pont de Nemours & Co. —
The Eagle-Picher Lead Co. —
Economy Electric Lantern Co. —
*Elastic Stop Nut Corp. —
Emsco Derrick & Equipment Co. —
Federal Electric Co. —
*The Edwin H. Fitler Co. —
Fluid Packed Pump Co. —
C. S. Foreman Co. —
Fort Worth Clearing House Association —
Fort Worth Laboratories 59
*Franks Manufacturing Co. —
*Frick-Reid Supply Corp. —
*Gardner-Denver Co. —
*The Garlock Packing Co. —
*Gaso Pump & Burner Manufacturing Co. —
The Gates Rubber Co. —
*Gatke Corp. —
*General Electric Co. —
*The Goodyear Tire & Rubber Co. —
*H. P. Gott Manufacturing Co. —
*Gray Tool Co. —
*Grizzly Manufacturing Co. —
*The Guiberson Corp. —
*Gulf Coast Machine & Supply Co. —
Gulf Engineering Co. —
Gulf Oil Corp. —
Gulf States Utilities Co. —
*Halliburton Oil Well Cementing Co. —
*Harrisburg Steel Corp. —
*Haynes Stellite Co. —
*Hazard Wire Rope Division, American Chain & Cable Co. —
Hercules Powder Co. —
*Hewitt Rubber Corp. —
J. I. Hill Company —
Houston Laboratories 59
*Houston Ready-Cut House Co. —
*Hughes Tool Co. I Cover
Humble Oil & Refining Co. —
*Hunt Tool Co. —
Independent Exploration Co. —
*Ingersoll-Rand Co. —
The International Nickel Co. 43
Jarecki Manufacturing Co. —
*The Jeffrey Manufacturing Co. —
W. P. Jenny —
Jensen Bros. Manufacturing Co. 2
*Johns-Manville Corp. —
The S. M. Jones Co. —
*Jones & Laughlin Steel Corp. —
*Justrite Manufacturing Co. —
*Kerotest Manufacturing Co. —
*Keuffel & Esser Co. —
*Kinzbach Tool Co. —
*Kobe, Inc. —
Ladish Drop Forge Co. —
Landis Machine Co. —
*Lane-Wells Company —
*Larkin Packer Co. —
Lebanon Steel Foundry —
*Le Roi Co. —
*A. Leschen & Sons Rope Co. —
*Link-Belt Co. 6
Lone Star Cement Corp. —
*Lucey Boiler & Manufacturing Co. —
*Lucey Export Corp. —
*Lucey Products Corp. —
*The Ludlow Valve Manufacturing Co. —
Macklin Co. —
Macwhyte Co. —
Magnet Cove Barium Corp. —
Mark Twain Hotel —
Marmon-Herrington Co. —
*Martin-Decker Corp. 62
Hotel McAlpin 54
*McCullough Tool Co. —
*McEvoy Co. —
*McKissick Products Corp. —
*Merco Nordstrom Valve Co. —
*Metric Metal Works —
*Mission Manufacturing Co. 41
*Morse Chain Co. —
Murphy Diesel Co. —
National Bank of Tulsa —
National Geophysical Co. —
*National Lead Co. 29
The National Supply Co. 26-27
National Tube Co. —
New Bedford Cordage Co. —
Nicholson File Co. —
*The O. C. S. Manufacturing Co. —
*Oil Center Tool Co. —
*Oil City Brass Works 60
Oil Well Supply Co. —
*Otis Pressure Control, Inc. —
*The Parkersburg Rig & Reel Co. 25
*Patterson-Ballagh Corp. —
*Pelican Well Tool & Supply Co. 55
Petroleum Electric Power Association 51
Petroleum Rectifying Company of California —
*Pittsburgh Equitable Meter Co. —
*Pittsburgh Steel Co. 8
*Plymouth Cordage Co. —
*Quaker Rubber Corp. 35
*Raybestos-Manhattan, Inc. —
Reading-Pratt & Cady Division, American Chain & Cable Co. —
*Rector Well Equipment Co. —
*Reed Roller Bit Co. 5
Republic National Bank of Dallas —
Republic Steel Corp. —
*The Ridge Tool Co. 36
*John A. Roebling's Sons Co. —
Rodgers Hydraulic, Inc. —
*Rollway Bearing Co. 4
*SKF Industries, Inc. —
*Schlumberger Well Surveying Co. —
The Second National Bank of Houston —
Seismic Explorations, Inc. —
Seismograph Service Corp. —
Sharman and Allen Co. —
Shell Development Co. —
A. O. Smith Corp. —
Nowery J. Smith Supply Co. —
Southern Engine & Pump Company —
*Southern Mill & Manufacturing Co. —
*Spang & Co. —
Spang Chalfant, Inc. —
*Sperry-Sun Well Surveying Co. —
*Standco Brake Lining Co. 59
Tank Seal Products Co. —
Texaco Development Corp. —
*Texas & Louisiana Tool Co. —
*Texasteel Manufacturing Co. —
The Thermoid Co. —
*Thompson Tool Co. —
*Thornhill-Craver Co. —
Treasury Department —
*Tretolite Co. 3
*Union Carbide and Carbon Corp. —
*Union Wire Rope Corp. 47
*Unit Rig & Equipment Co. —
United States Steel Corp. II Cover
*Universal Atlas Cement Corp. II Cover
Visco Products Co. 31
Warner & Swasey Co. —
Waugh Laboratories —
*Waukesha Motor Co. —
*Westinghouse Electric & Mfg. Co. —
*The Wheland Co. —
*The Whitney Chain & Manufacturing Co. —
Whitney National Bank —
*Wickwire Spencer Steel Co. —
*J. H. Williams & Co. —
*Wilson Manufacturing Co. —
Wilson Supply Co. —
*Web Wilson Oil Tools Co. —
*Wisconsin Motor Corp. —
*Worthington Pump & Machinery Corp. —
Wyatt Metal & Boiler Works —
York Oilfield Supply Co. —
The Youngstown Sheet & Tube Co. —